FLIGHT
The AIRCRAFT ENGINEER & AIRSHIPS

First Aero Weekly in the World

Founder and Editor: STANLEY SPOONER

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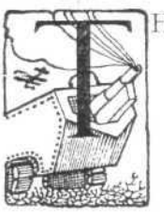


The Cairo–Kano Flight

THE three D.H.9A machines of the Royal Air Force which left Helwan aerodrome, Cairo, on October 27, have successfully accomplished the outward part of the journey to Kano, Nigeria, where they arrived on Sunday, November 1. The distance covered is in the neighbourhood of 3,000 miles, so that the machines have covered between 500 and 600 miles per day during the flight. The route followed by the three machines, which were piloted by Squadron-Leader A. Coningham, Flight-Lieut. H. V. Rowley, and Flight-Lieut. H. W. Baggs, respectively, was Helwan to Khartoum, along the Nile, a distance of approximately 1,000 miles and then across the African continent to Kano, which constituted a further distance of in the neighbourhood of 1,600 miles. On the first day of the flight the machines reached Wady Halfa, on the second day they flew to Khartoum, and on the third day they reached El Fasher in the Sudan.

In view of the extremely trying conditions under which the flight was made, the successful accomplishment of the first half of the undertaking is a feat which reflects the very greatest credit on the Royal Air Force in general, and on the officers and men concerned in particular. So far there is little information available concerning the manner in which the machines have withstood the rather severe climatic conditions, but the very fact that Kano has been reached by all three machines to schedule time seems to indicate that no trouble of a serious nature can have been experienced.

A few weeks ago we referred to the flight, and pointed out that in the interest of British aviation it would have been better if British engines had been used. (The D.H.9A's are fitted with American "Liberty" engines.) We pointed out that if the flight was successful the Americans would naturally claim a good deal of the credit. Although it is perfectly true, of course, that the "Liberty" engine is no longer being manufactured, those in use being

surplus war stocks, the general public cannot be assumed to be aware of this fact, and when it is stated, as in all fairness it must be, that the engines used were American, the impression is somewhat apt to be given that the particular engine chosen was the best available.

Touching upon this point we have received from the Society of British Aircraft Constructors, Ltd., the following letter, signed by Mr. T. O. M. Sopwith, as Chairman :—

"Some comment has been made in the Press as to the use by the Royal Air Force of 'Liberty' (American) engines on the Cairo-Kano flight now being undertaken.

"We are informed by the Air Ministry that this is a purely Service exercise being carried out by the local Squadron stationed at Helouan, using its own equipment, which happens to include war-time 'Liberty' engines. For a flight of this character, it would have been quite out of place to send out the latest types of British engines.

"The important long-distance flight which the Royal Air Force propose to undertake next spring from Cairo to the Cape is, however, an operation of a different character, and we understand that for this flight only British engines will be used."

From the above we are very glad to learn that for the flight from Cairo to the Cape, which is being planned for next spring, it is intended to use British engines only, and we fully appreciate the fact that the Cairo-Kano flight is regarded by the Air Ministry as a purely Service exercise, carried out by the Helouan Squadron, but we still think an effort might have been made to use British engines, although probably the matter is of rather less consequence than appeared at first. What does matter is that the first half of the flight has been successfully accomplished, and thus a demonstration has been given which proves that the Royal Air Force, when given the opportunity, is capable of carrying out long-distance flights which are in every way as meritorious as any made by foreign aviators.

By way of showing that there is no lack of British engines quite suitable for long-distance flights under very varying climatic conditions, it may be as well to recall briefly some of the long flights made by machines fitted with such engines as the Rolls-Royce "Eagle," the Napier "Lion," the Siddeley "Puma," and the Bristol "Jupiter." Foremost among these were, of course, the flight across the Atlantic by the late Sir John Alcock, and the flight from England to Australia by the late Sir Ross and Sir Keith Smith. Further instances are the flight from England to South Africa, the flight around Australia, the flight from Holland to Batavia in the Dutch East Indies, the flight across the South Atlantic, the flight from Brussels to the Belgian Congo, the flight from Amsterdam to Tokyo, the flight from London to Rangoon and back, London to Africa in a day, and also from Toulon to Casablanca in one day.

As comparatively little publicity has been given to the last-mentioned flight, it may be stated here that this was made by French service aviators, flying Farman "Goliaths," fitted with floats, and driven by Bristol "Jupiter" engines. The distance from Toulon to Casablanca is 2,800 km. (1,740 miles), so that it will be seen that to cover this distance in one day was a magnificent achievement. Add to this the fact that three Squadrons, each consisting of six machines, left Cuers-Pierrefeu, and that all arrived at their destination, and it will be seen that out of the 36 Bristol "Jupiters" used, none can have given serious trouble, or the machines would not all have been able to reach Casablanca. The engines were, of course, built under licence in France, but for all that we think that this country can still claim a very large share in the flight.

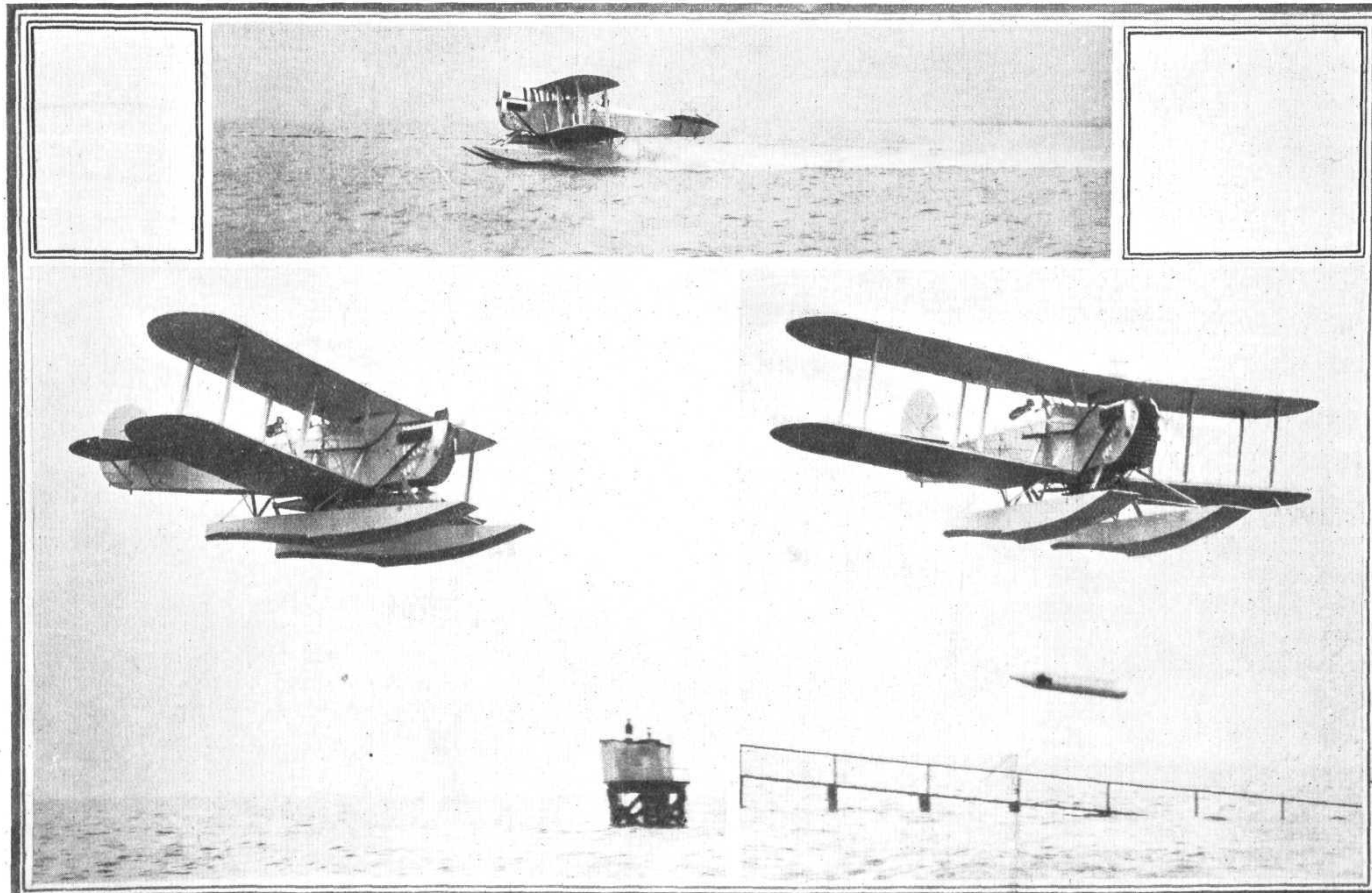
Many more instances of long-distance flights carried out with British engines could be quoted, but sufficient has, we think, been said to indicate that if the Royal Air Force, or any individual civilian, is contemplating long-distance flights for the purpose of "blazing the trail," or "showing the flag," there is no scarcity of British engines which have proved themselves capable of doing the job. As regards the Cairo-Kano flight, the excuse that it is regarded by the Air Ministry mainly in the nature of a practice or training flight may perhaps be accepted as perfectly valid, but one might be justified in asking how it is that, in 1925, seven years after the cessation of hostilities, the Royal Air Force should still be equipped with surplus American engines?

* * *

The Schneider Trophy Race

In this week's issue of FLIGHT we present to our readers what is, we believe, the most comprehensive history of the Schneider Trophy seaplane race that has ever been published, and we feel sure that, in view of the extraordinary interest taken in this contest, not only by aviation circles but by the general public, our special coloured supplement will be welcomed by our readers. From a perusal of the supplement it should be possible to form a picture of the tremendous progress made since Prevost won the first Schneider Race in 1913 on a Deperdussin monoplane at a speed of 45·75 m.p.h. In 12 years the speed has increased from this figure to 232·573 m.p.h., an average increase of slightly more than 15 m.p.h. per annum, if the war years 1914-18 are counted in, and an increase of more than 26 m.p.h. for each Schneider race held (the 1925 race being the seventh).

Concerning the 1925 Schneider Trophy race, there appears to be an impression that the British machines were hopelessly outclassed. This is scarcely fair to the British designers, since the fact of the matter is that, although Lieut. Doolittle's speed was little short of marvellous, he scored tremendously in the race through his masterly handling of his machine. We do not mean to suggest that the British racers were as fast as Doolittle's. They were very definitely not, but they were by no means as hopelessly outclassed as some would have us believe. There can be very little doubt that the human element was responsible to a much greater extent than is generally realised. The British pilots had not had anything like as much practice as they should have had before the race, and it is becoming increasingly evident that if Great Britain is to have any chance of winning the Trophy next year, our machines must be finished at least three months before they leave this country, and the pilots must go into training, on the older machines if necessary, some considerable time before that. Cornering must be practised diligently, since obviously only pilots of exceptional physique are able to stand the strain of flying these fast machines. All these considerations point inevitably and inexorably to the fact that the Air Ministry must make up its mind at once, not next month or even next week, but *now*, whether or not Great Britain is to make a final bid for the Trophy in 1926.



THE BLACKBURN "VELOS" TORPEDO SEAPLANE; NAPIER "LION" ENGINE: The upper photograph shows the machine taking off, that on the left shows the machine in flight, and, on the right, the Velos is shown at the moment of dropping the torpedo.

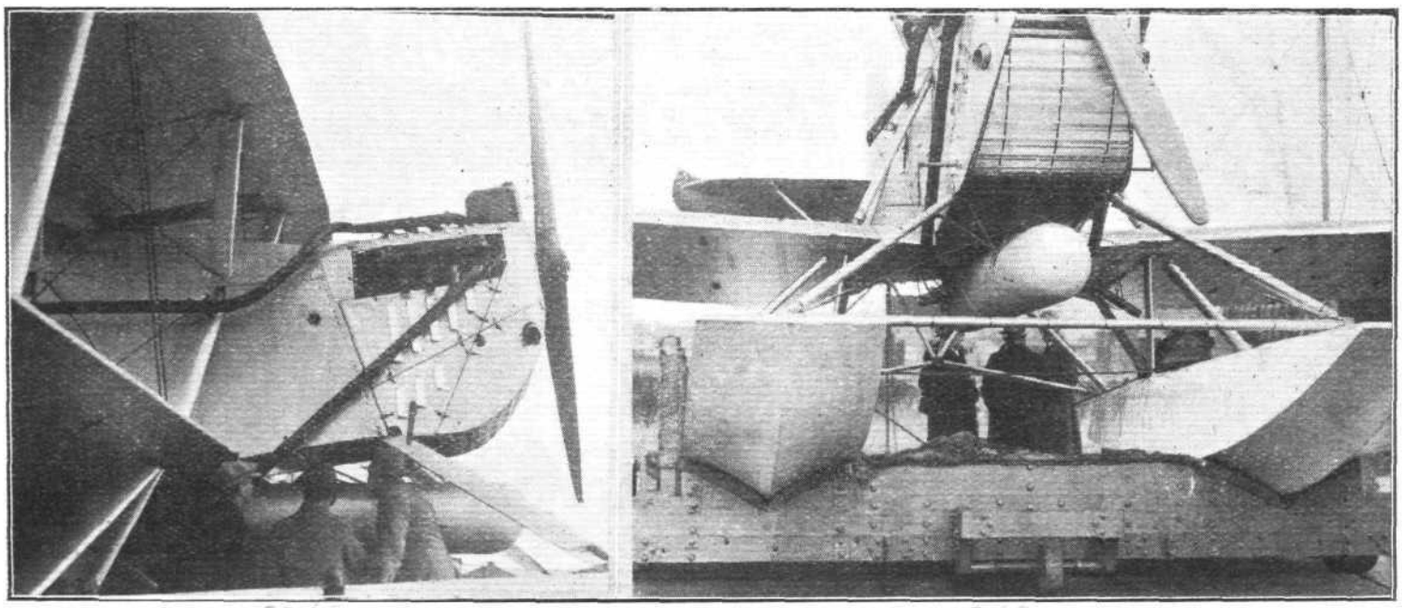
A NEW BLACKBURN TORPEDO SEAPLANE

Foreign Attaches Witness Demonstrations of "Velos" at Brough

ON October 28 last, a party of foreign Attachés and press representatives paid a visit to the air station at Brough at the invitation of the Blackburn Aeroplane Company and D. Napier & Sons, to see demonstration flights with a new seaplane torpedo carrier recently completed by the Blackburn works. The machine, which is known as the "Velos," would be a land machine, but can operate with a fleet, using a vessel as its supply base.

The torpedo is carried immediately under the fuselage, the under part of which has been strengthened to take the splash from the torpedo as the latter strikes the water.

From the flights, it was evident that the manœuvrability



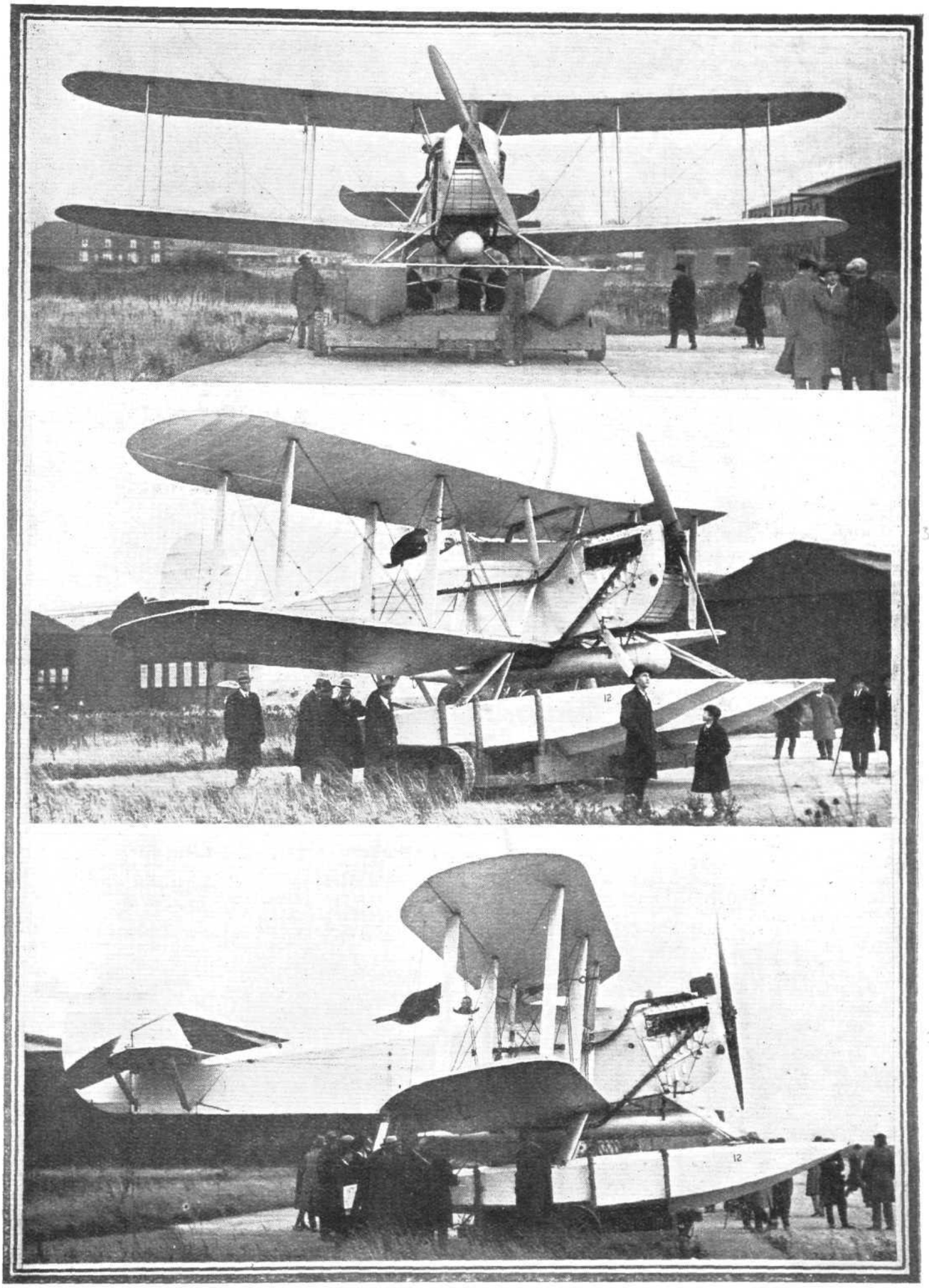
THE BLACKBURN "VELOS": These two photographs show the nose housing the Napier "Lion" engine, and, on the right, the mounting of the torpedo between and above the two floats.

retains all the familiar characteristics of the Blackburn "family," but it will be realised that it is a matter of some difficulty to design a twin-float seaplane with accommodation for a torpedo. Hitherto, torpedoplanes have mostly been of the land aeroplane type, with wheel undercarriage, but the advantages of the seaplane for the work are obvious. Thus, the machine is not compelled to return to a shore base, as

of the "Velos," both on the water and in the air, is exceptionally good, and the machine appeared to leave the water (with full load) in about 20 seconds. The engine fitted is the famous Napier "Lion."

The Blackburn "Velos" has a span of 48 ft., an overall length of 36 ft., and a height of 12 ft. 6 in. It carries a Mark VIII torpedo.

FOREIGN ATTACHES' VISIT TO BROUGH: Standing in front of the Blackburn "Velos" are, from left to right, Lieut.-Commander Navarro (Spanish Naval Attache), Commander Guedes de Carvalho (Brazilian Naval Attache), Air Vice-Marshal Sir Vyell Vyvyan, Capt. Woodhead (pilot of the "Velos"), Colonel the Master of Sempill, Capt. Cervera (Chief of the Spanish Naval Commission), Major Davidson (United States Air Attache) and Major Rennie.



THE BLACKBURN "VELOS": Three views of the latest Blackburn torpedo sea plane, with Napier "Lion" engine.

AIR MINISTRY NOTICES

Radio-Goniometric (D.F.) Service on Civil Air Routes : Great Britain, Belgium, France and Holland.

1. By agreement between the Governments of Belgium, France, Holland and Great Britain, the radio-goniometric (D.F.) services for aircraft in these countries, will adopt the organisation for co-ordinated working described below. This organisation will be put into force gradually, commencing from September 25, 1925.

2. *Stations.*—The following are the stations available :—

Stationand Call Signal.	Latitude.	Longitude.	Wave-length (metres).	Re-marks.
GREAT BRITAIN—				
Croydon	51° 21′ 10″ W.	0° 07′ 40″ W.	900	Control Station.
Lympne	51° 05′ 00″ N.	1° 00′ 50″ E.	900	—
Pulham	52° 24′ 15″ N.	1° 14′ 25″ E.	900	—
BELGIUM—				
Brussels	50° 52′ 50″ N.	4° 25′ 05″ E.	900	Control Station.
FRANCE—				
Le Bourget	48° 57′ 45″ N.	2° 26′ 26″ E.	900	Control Station.
HOLLAND—				
Rotter-dam	51° 52′ 40″ N.	4° 27′ 15″ E.	900	Control Station.

3. *Sectors.*—The air routes are divided up into sectors so that one aerodrome D.F. station in each country controls all the aircraft D.F. routine within that country's area. One or more D.F. stations collaborate with each Control Station for " position " work.

The routes are divided up as follows :—

(*a*) LONDON—FRENCH COAST.
Control station .. .. Croydon.
Collaborating stations .. Lympne, Pulham.

(*b*) FRENCH COAST—BRUSSELS.
Control station .. .. Brussels.
Collaborating stations .. Rotterdam, Pulham, and if required, Lympne.

(*c*) FRENCH COAST—ROTTERDAM.
Control station .. .. Rotterdam.
Collaborating stations .. Brussels, Pulham, and, if required, Lympne.

(*d*) BRUSSELS—COLOGNE.
Control station .. .. Brussels (later Cologne).
Collaborating station .. Rotterdam.

(*e*) ROTTERDAM (AMSTERDAM)—EAST DUTCH FRONTIER.
Control station .. .. Rotterdam.
Collaborating station .. Brussels (later Cologne).

(*f*) FRENCH COAST—PARIS.
Control station .. .. Le Bourget.
Collaborating stations .. Lympne, Brussels.

(*g*) LONDON—NORTH OF ENGLAND.
Control station .. .. Croydon.
Collaborating station .. Pulham.

(*h*) ROTTERDAM (AMSTERDAM)—BRUSSELS.
Control station .. .. Rotterdam.
Collaborating station .. Brussels (later Cologne).

(*i*) BRUSSELS—PARIS.
Control station .. .. Brussels.
Collaborating station .. Lympne (later Strasburg).

(*j*) BRUSSELS—STRASBURG.
Control station .. .. Brussels.
Collaborating station .. Cologne, when opened.

4. *Routine.*—(1) D.F. assistance will be limited to :—

(*a*) " Single Bearings " as determined by a single station.

(*b*) " Positions ", as determined by two or more stations.

All bearings transmitted, whether for (*a*) or (*b*) will be True bearings.*

(2)—(*a*) " Single bearings " may be given by an individual station to aircraft upon request, provided that the station concerned is not already otherwise occupied.

Aircraft operators are to ascertain that a station is free before calling it.

(*b*) For " position " work aircraft will call up and communicate only with the control station of the area in which they are flying.

The D.F. stations working a sector under a control station will transmit to the latter their bearings obtained, the control station will plot the position of the aircraft and the plotting will be communicated to the aircraft by the control station.

In every instance where " Bearings " or " Positions " are rendered, mention will be made, in passing them, of the exact time of readings.

(3) Classification of " Bearings " and " Positions."

Bearings will be classified as—

(*a*) First Class—one in which a good, sharply defined and steady " minimum " is present.

(*b*) Second Class—one in which there is any doubt as to the quality of the " minimum."

Bearings other than First Class *must* invariably be qualified when they are passed to aircraft.

Positions will be classified as—

(*a*) First Class—one which is plotted from First Class bearings from any two of the observing stations.

(*b*) Second Class—one which is plotted in cases where one or more of the bearings is Second Class.

Positions other than First Class *must* invariably be qualified when they are passed to aircraft.

In cases where it is necessary to pass Second Class positions, every endeavour is to be made to obtain further bearings of the higher class as soon as possible afterwards.

If it is impossible to obtain satisfactory bearings through any cause whatsoever, the fact will be at once reported to the competent aerodrome authority, who is then empowered to refuse D.F. assistance.

(4) Procedure : The procedure employed will be that laid down for Croydon and Pulham in paragraphs 34 and 35 of the Air Pilot Appendix, with the exception relating to machines of Imperial Airways, Ltd., when flying towards Croydon, mentioned in paragraph 35A of the Air Pilot Appendix (published in A.P.M.S. 9).

5. *Check Bearings.*—In order to provide against the danger of giving D.F. bearings which may be inaccurate, the following routines will be carried out by ground stations :—

Each operator on commencing watch will, as soon as routine traffic permits, take check bearings upon all other stations with which his own station normally works in conjunction. A variation of more than 2 degrees from the normal bearings should be immediately reported to the competent authority who will investigate the matter forthwith. If the error appears to be one of considerable magnitude, this authority will, at his discretion, notify any aircraft concerned that bearings cannot be supplied until the cause of the error has been eliminated. Special transmissions for checking purposes should never be requested if advantage can be taken of the object station's normal transmissions. An entry in the log book that check bearings have been taken will be made by all operators upon taking over watch.

6. *Distress Calls.*—Upon receipt of a distress call the control station of the area in which the call is made, and its co-operating station(s) will concentrate upon getting a bearing of the aircraft concerned and will at once report results to the aerodrome authority who will take all necessary steps to render immediate assistance. During the time that these two stations are taking such bearings all other route stations within range will concentrate upon getting the sense of any message transmitted.

Immediately a distress call is made all ground stations and aircraft will cease normal working on 900 metres and will only resume it upon advice from the control station of the area concerned.

During such occurrences R/T communication point-to-point will be limited to the absolute minimum, and such transmissions will only be those concerning the rendering of assistance.

7. *Remarks.*—In order to ensure an accurate D.F. service, the following points will be borne in mind :—

(i) Station clocks and the watches on the various aircraft must be synchronised daily from the Eiffel Tower time signal (G.M.T.).

(ii) The operation of taking a bearing must be carried out over the full period that speech is being transmitted for that purpose and every possible endeavour must be made to ensure the maximum accuracy.

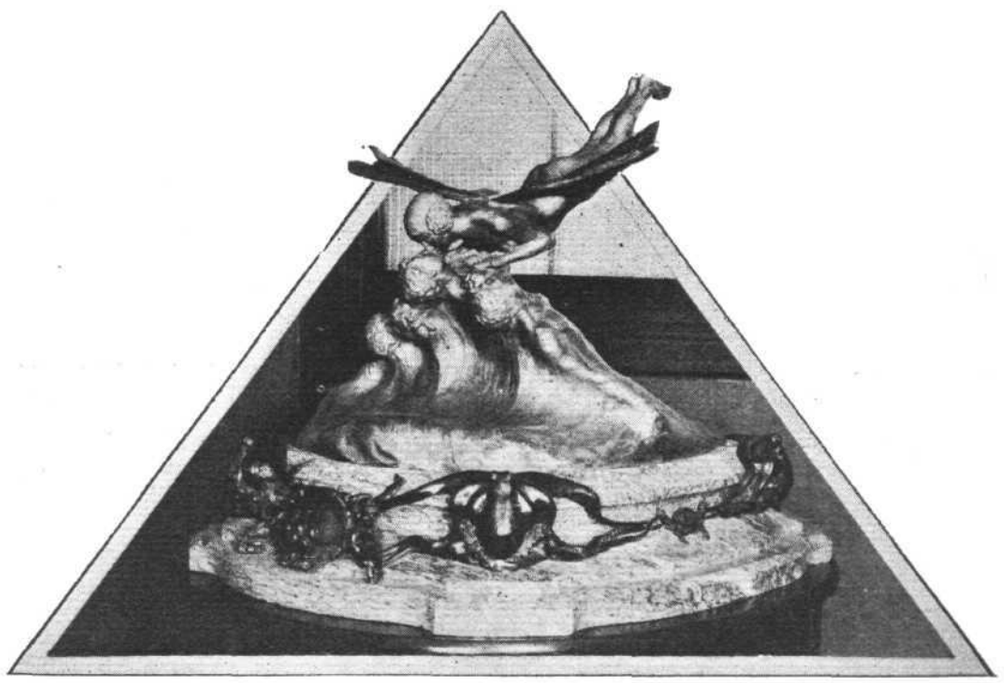
(iii) The operation of taking bearings and plotting positions is to be most carefully carried out and is never to be hurried. If it is discovered that an erroneous bearing or position has been given the call to the aircraft concerned is to be made at once and a correction given.

(iv) Operators must be conversant with every form of procedure likely to be used at any time for direction finding work.

8. Air Pilot Appendix : An amendment to the Air Pilot Appendix will be published in due course. (*No.* 54 *of* 1925.)

* An exception to this rule is made in the case of machines belonging to Imperial Airways, Ltd., when flying towards Croydon. *See* Air Pilot Appendix para. 35A (published in A.P.M.S. 9).

HISTORY OF SCHNEIDER TROPHY



SEAPLANE RACE

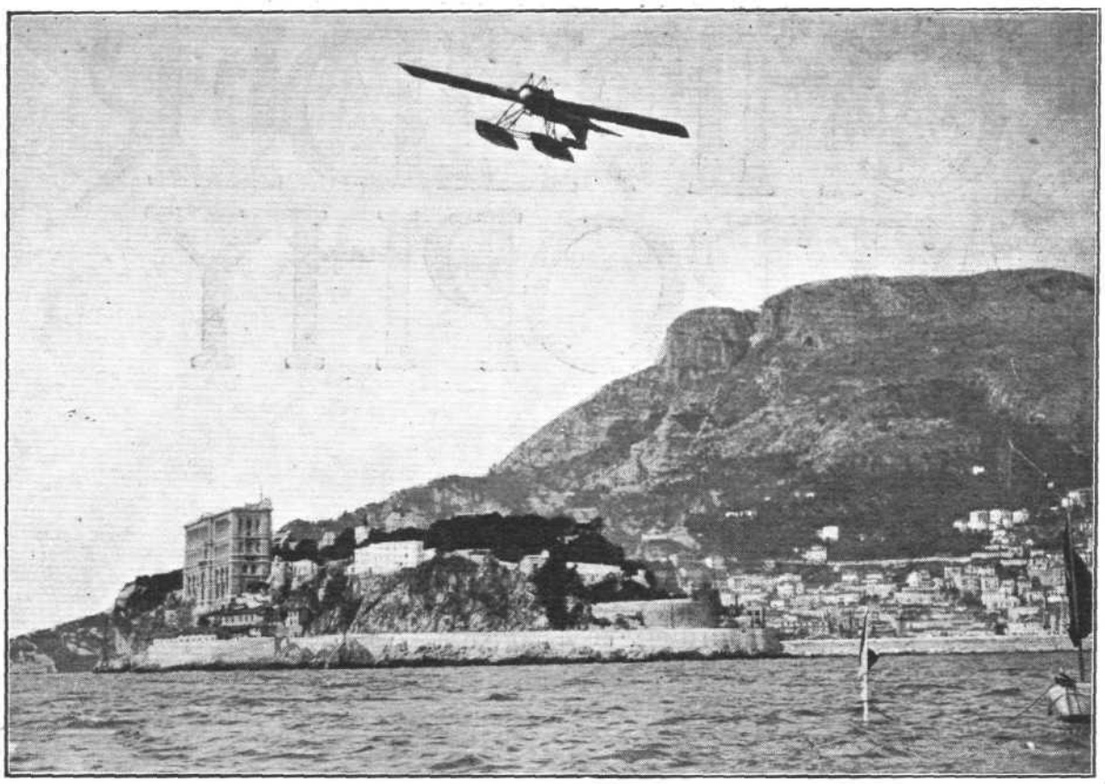
1913 — 1925

FLIGHT

NOVEMBER 5, 1925

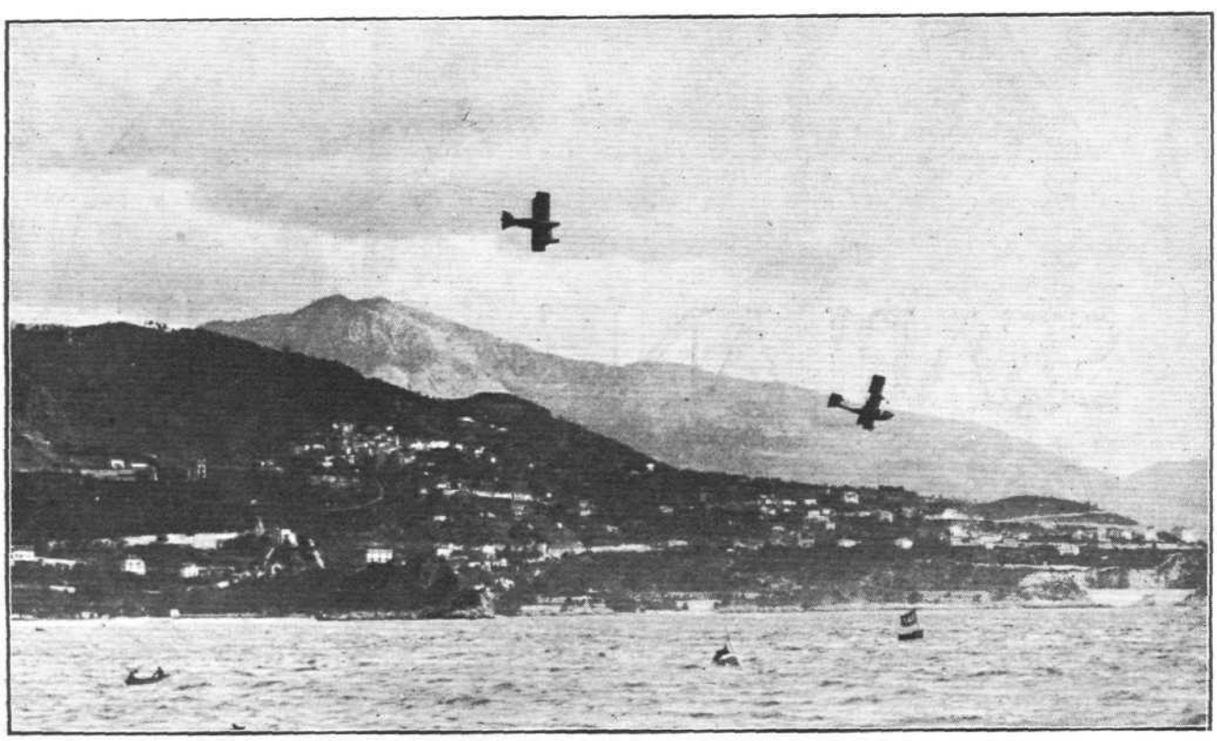
HISTORY OF THE SCHNEIDER TROPHY RACE

IN 1913 the organisation of the first "Jacques Schneider Maritime Cup"—a speed contest, for an *object d'art* valued at 25,000 francs, open to all types of seaplanes—was given to the Aero Club de France and arrangements were made to hold the contest at Monaco. The Aero Club de France received many entries for the French team, viz., a Borel, two Breguets, two Deperdussins, a Morane, and two Nieuports. The actual contest took place on August 16, the course being 150 sea miles, and it was won by the well-known French pilot Prevost, who covered the distance in 3 hrs. 48 mins. 22 secs., averaging 72·6 k.p.h., or 45·75 m.p.h. Prevost's machine was a Deperdussin monoplane, with twin floats, fitted with a 160 h.p. Gnome rotary air-cooled engine.



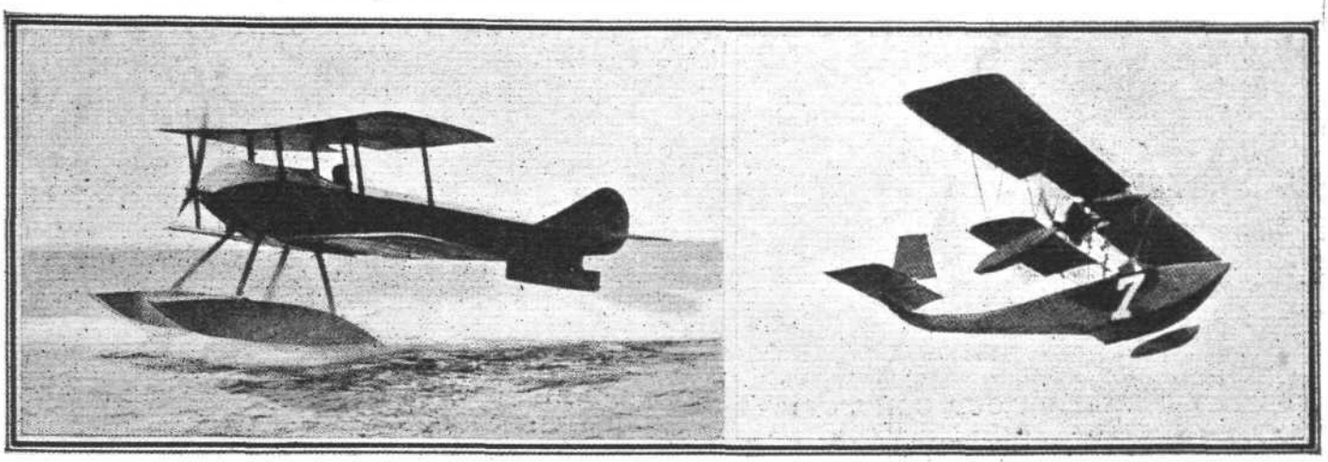
THE FIRST SCHNEIDER CUP CONTEST, 1913: The French pilot Prevost winning the contest at Monaco on the Deperdussin monoplane, 160 h.p. Gnome. His speed was 72·6 k.p.h. (45·75 m.p.h.).

France having thus won the first round, they had again to



THE SECOND SCHNEIDER CUP CONTEST, 1914: A fine view of the only two machines to complete the course; the Sopwith, piloted by Howard Pixton, who won the contest, passing the F.B.A. (Switzerland) flying-boat, piloted by M. Burri. Pixton's speed was 139·7 k.p.h. (86·8 m.p.h.).

organise the contest for the following year. This was once again held at Monaco, over a closed circuit having a total distance of 150 sea miles (28 laps). At the start competitors had to undergo a navigability test—taxying over the starting line, then rising and making a tour of the course with at least two alightings on the water. Entries were officially received from Great Britain, France, Germany, Switzerland and U.S.A.



The two competing machines in the 1914 Schneider Cup Contest: (Left) Mr. Howard Pixton's winning Sopwith seaplane, 100 h.p. Mono-Gnome, and (right) M. Burri's Franco-British flying-boat.

The contest took place on April 20, and was won by the British entrant, Howard Pixton, who was piloting a Sopwith biplane, fitted with a 100 h.p. Gnome. He covered the course in 2 hrs. 0 mins. 16 secs., or at an average speed of 139·7 k.p.h. (86·8 m.p.h.). The only other competitor to complete the course was Burri, on the F.B.A. flying-boat, representing Switzerland, who completed the course in 3 hrs. 24 mins. 12 secs. Of the French team Espanet, on a Nieuport, retired on the sixteenth lap, Levasseur (on a similar machine) doing likewise on the following circuit, while Garros, on a Morane, did not start. Lord Carbery, on a Deperdussin, representing Great Britain, completed one lap. America's two representatives, Weymann (Nieuport) and Thaw (Deperdussin), also failed to fly the course, while Stoeffler (Germany) crashed his machine the previous day.

Then came the Great War, and further racing for the Schneider trophy was suspended until 1919. Great Britain having last won the trophy, the first post-war contest was organised by the Royal Aero Club of Great Britain, and was held at Bournemouth on September 10, 1919. The course was a triangular one, starting and finishing off Bournemouth pier and with turning points at Swanage Bay and Hengistbury Head respectively, the length of the course being 20 nautical miles. This time the total distance to be flown was 200 nautical miles, so that competitors had to make ten laps of the course.

The 1919 Schneider Cup contest was a somewhat painful episode from the sporting point of view. The Royal Aero Club had received a fair number of entries, representing Great Britain, France and Italy. Three machines, and one reserve, were entered by Great Britain, viz.: Avro tractor seaplane (240 Siddeley "Puma"), pilot, Capt. H. A. Hamersley; Fairey tractor seaplane (450 Napier "Lion"), pilot, Lieut.-Col. Vincent Nicholl; Sopwith tractor seaplane (450 Cosmos "Jupiter"), pilot, Harry Hawker; Supermarine "Sea Lion" flying-boat (450 Napier "Lion"), pilot, Squad.-Comdr. B. D. Hobbs. France had three machines: two Nieuports (300 Hispano-Suiza), piloted by Casale and Malard, and a Spad-Herbemont, piloted by Sadi Lecointe. Italy had one machine, a Savoia S.13 flying-boat (250 Isotta Fraschini), piloted by Janello.

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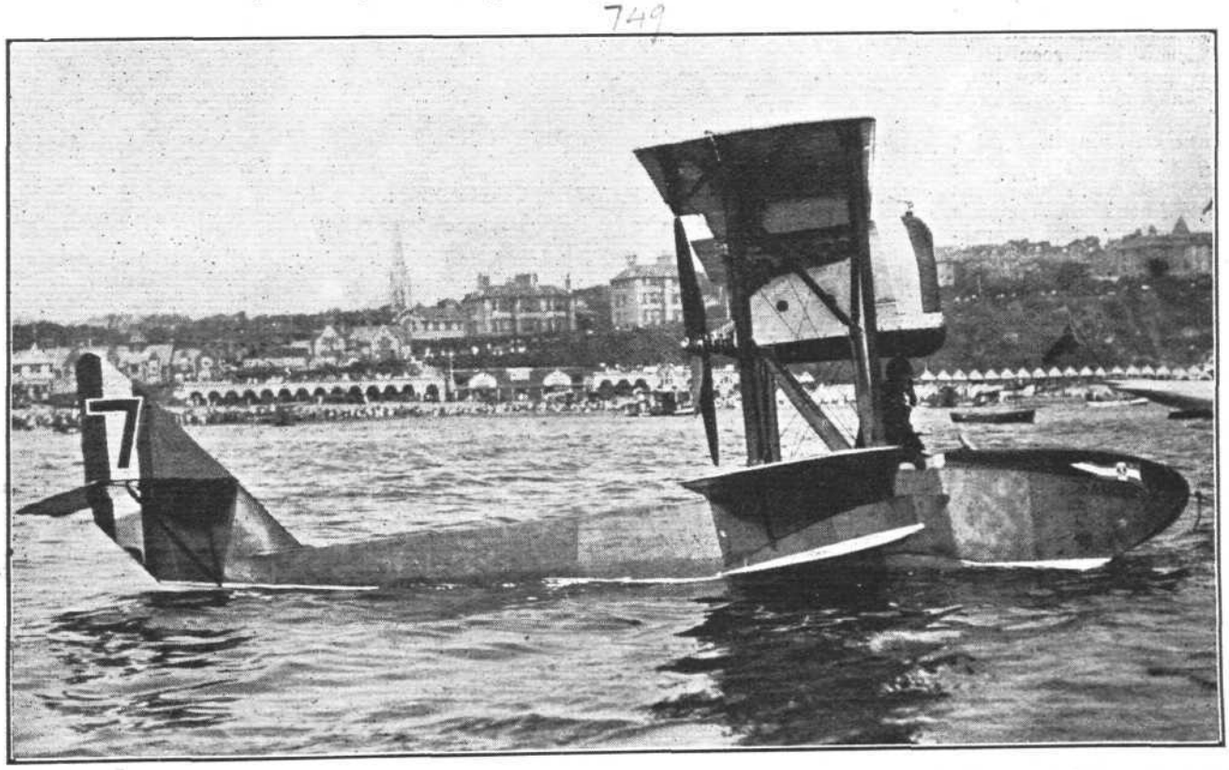
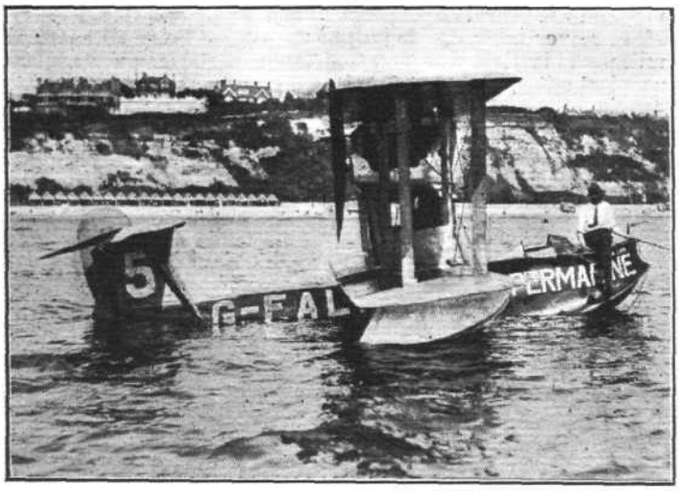


THE THIRD SCHNEIDER CUP CONTEST, 1919: This contest, held at Bournemouth, was annulled, as Janello's Savoia, above, which alone completed the full course, was not observed on one of the mark boats.

Little, we think, remains to be said regarding the actual contest. In the first place, fog—sometimes thick and sometimes promising to clear off—prevailed throughout the day. Some of the competitors had mishaps, or were unable to get



THE 1919 SCHNEIDER CUP CONTEST: A British entry, the Supermarine "Sea Lion" (Napier "Lion"), piloted by Sq.-Com. Hobbs.

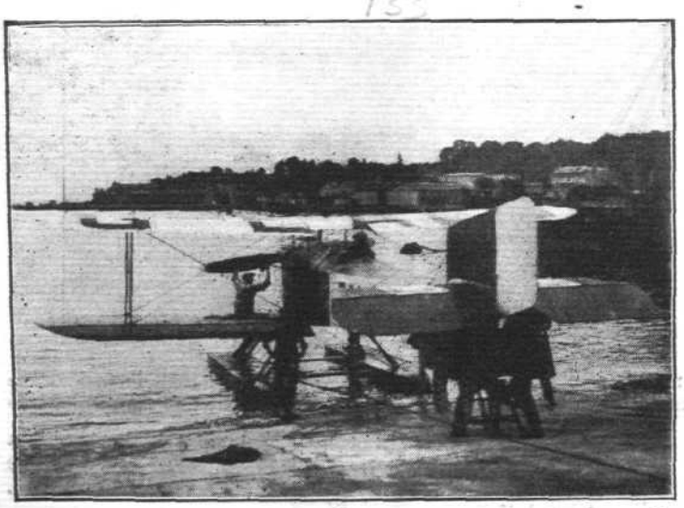
A British non-competitor in the 1919 Schneider Cup Contest: The Avro seaplane (Siddeley "Puma") on which Capt. Hamersley put up some demonstration flights.

ready in time. Then, secondly, after several delays and attempts a start was actually made later in the afternoon. The Fairey got away first and then, in what seemed to be a go-as-you-please fashion—three others started, the Supermarine, the Sopwith and the Savoia. With the exception of the last-named these machines only made a few circuits in the mist, and then retired. Janello, however, continued and flew the required number of laps—but, as it was announced that he had not been seen from the Swanage mark boat, the race was officially declared void!

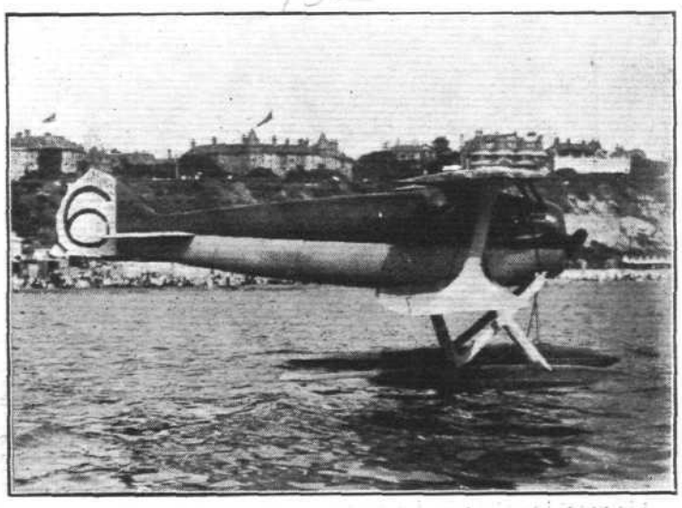
So much for the third Schneider contest. For the 1920 race it was decided, as a compliment to Janello's gallant effort at Bournemouth, to hold the contest at Venice. The course of 200 sea miles was again a triangular one of 10 laps. Competitors had to undergo seaworthiness tests prior to the start. Again, this year's contest was not a particularly brilliant one, for no British machine had been entered and the French challengers were withdrawn, while domestic troubles in Italy resulted in the appearance of one machine only representing that country on the day of the race. This was Luigi Bologna's Savoia type 12 flying boat (470 h.p. Ansaldo). Having successfully passed his seaworthiness tests, he made an attempt to fly over the course on September 19, but had to give up owing to squally weather. On September 21, however, he succeeded in completing the 10 laps in 2 hrs 10 mins. 35 secs., at an average speed of 172·3 k.p.h. (107 m.p.h.). In short, the 1920 contest was a "fly over."

THE 1919 SCHNEIDER CUP CONTEST: A third British representative, the Sopwith seaplane (Bristol "Jupiter"), piloted by Harry Hawker.

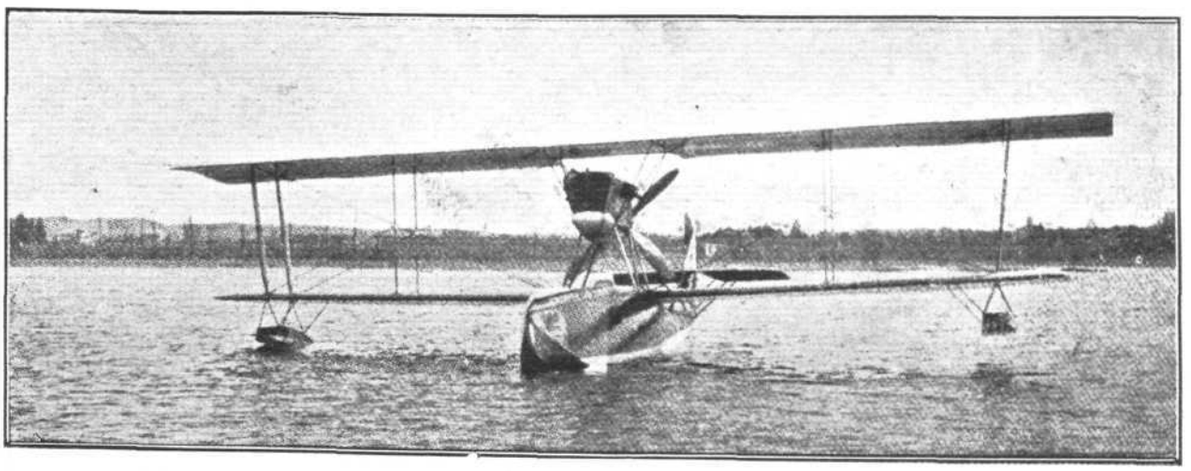
There is not much to record as regards the 1921 contest. Again there was no British entry, while the one French entry, a Nieuport fitted with a 300 Hispano-Suiza, piloted by Sadi Lecointe, was crashed before the race. This left three Italian representatives—Briganti on a Macchi VII flying boat (200 Isotta), Zanetti on a larger



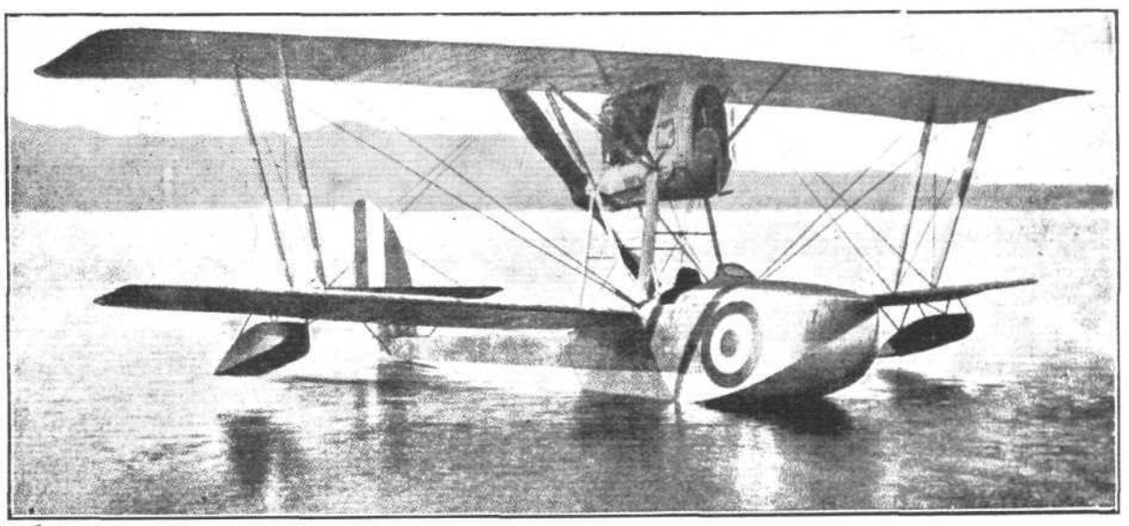
THE 1919 SCHNEIDER CUP CONTEST: Another British entry, the Fairey seaplane (Napier "Lion"), piloted by Lieut.-Col. Vincent Nicholl.



THE 1919 SCHNEIDER CUP CONTEST: The French representative, the Spad-Herbemont, piloted by Sadi Lecointe.



THE FOURTH SCHNEIDER CUP CONTEST, 1920 : The one and only surviving competitor in this year's contest (held in Venice) was Luigi Bologna's Savoia flying-boat (470 h.p. Ansaldo), who won the trophy for Italy with a speed of 172·5 k.p.h. (107 m.p.h.). His machine was similar to the type S.12 shown above.

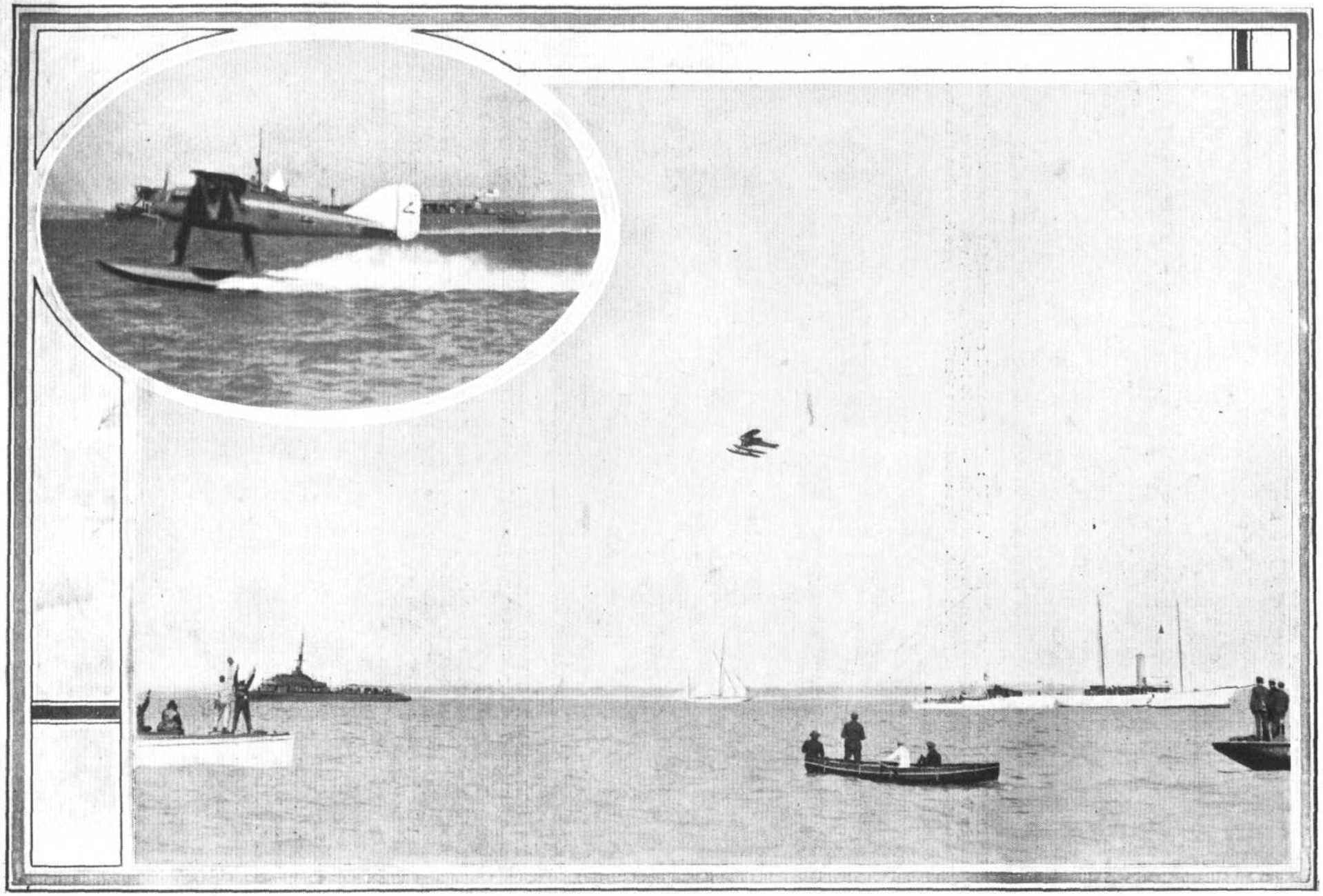


THE FIFTH SCHNEIDER CUP CONTEST, 1921 : Italy, once again, won the trophy, at Venice, when Briganti averaged 178·5 k.p.h. (111 m.p.h.) on the Macchi VII flying-boat (200 h.p. Isotta), shown above.

Macchi XIX flying-boat (700 Fiat), and Corniglio on a naval flying-boat (250 Isotta). These three, therefore, alone took part in the race at Venice on August 6–7. Zanetti's machine caught fire and Corniglio ran out of petrol, so both dropped out of the race, leaving Briganti to finish the 200 sea-mile course alone, in 2 hrs. 4 mins. 29 secs., or at 178·5 k.p.h. (111 m.p.h.).

The 1922 contest was of more than usual interest inasmuch

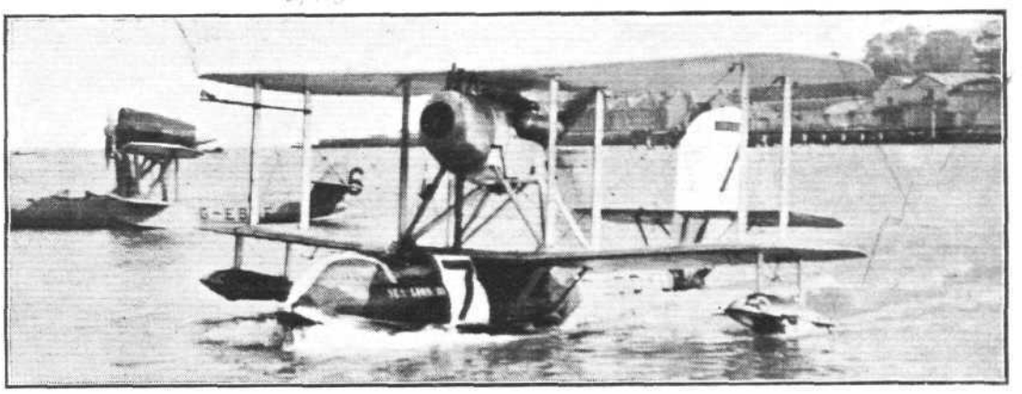
The Sixth Schneider Cup Contest, 1922: This year saw a British victory, when Capt. H. C. Biard won the trophy at Naples, with a speed of 234·5 k.p.h. (145 m.p.h.), on a special Supermarine flying-boat (Napier "Lion"), shown herewith.



THE SEVENTH SCHNEIDER CUP CONTEST, 1923: This time the trophy was secured by America. Above is shown Lieut. D. Rittenhouse winning, at Cowes, with a speed of 177·38 m.p.h., on the Navy-Curtiss racer. Inset, the machine taking off.

THE 1923 SCHNEIDER CUP WINNER: The Navy-Curtiss racer, 500 h.p. Curtiss D.12 engine.

as it would decide if Italy was to retain the trophy. This time the Supermarine Aviation Works built a special challenger, unassisted by the Government, to represent Great Britain. The contest was held at Naples on August 10–12, and the course was the same as in 1921. Two French machines entered could not be got ready in time, so besides the British representative, only two Italian representatives took part. These were Passaleva on a Macchi flying-boat and Zanetti on a Savoia 19 flying-boat. All three completed the course, the British pilot, Capt. Biard, being first with



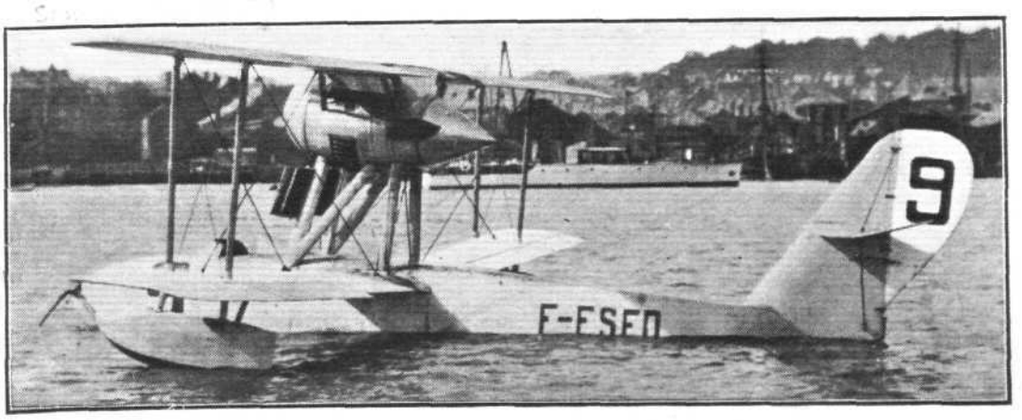
The 1923 Schneider Cup Contest: The British representative, which put up a good fight to retain the trophy. The Supermarine "Sea Lion III" (Napier "Lion"), piloted by Capt. Biard.

1 hr. 34 mins. 51⅗ secs., or an average speed of 234.5 k.p.h. (145·7 m.p.h.).

The seventh Schneider Cup contest was once more held in England the following year, 1923. On the whole, this contest was a very good one, there being a fair number of competitors, and the day of the race, September 28, at Cowes, was fine and full of incident. The course on this occasion was slightly less, being 186 sea miles, the start and finish being off Cowes and turning points being located at Selsey Bill and Southsea. On the day previous to the race competitors had to undergo navigability tests—rather more exacting than hitherto. In all, eight machines were entered—apart from reserves—as follows:—Great Britain: Supermarine "Sea Lion II" (Napier "Lion"), pilot Capt. Biard; Blackburn "Pellet" (Napier "Lion"). France: C.A.M.S. 38 (360 Hispano-Suiza), pilot Hurel; Latham L1 (two 400 Lorraine-Dietrich), pilot Dukemel; Blanchard C.1 (400 h.p. "Jupiter"), pilot Capt. Teste. U.S.A.: Curtiss-Navy C.R.3 (Curtiss D.12), pilot Lieut. Irvine; Curtiss-Navy C.R.3 (Curtiss D.12), pilot Lieut. Rittenhouse; Navy T.R.-3A (300 h.p. Wright), pilot Lieut. Weade.

In the navigability tests the Blackburn "Pellet" was put out of action, and the following machines actually started in the race the next day: the two Navy-Curtiss racers, the Supermarine, and the C.A.M.S. 38—the others being non-starters for various reasons. The C.A.M.S. retired on the second lap, leaving the two Curtiss and the Supermarine to finish. Rittenhouse made the fastest time—1 hr. 14 mins. 5¼ secs., or 177·38 m.p.h. Irvine came next with 173·46 m.p.h., while Biard's speed was 151·16 m.p.h.

Thus the Schneider trophy went to America. In 1924 there were no foreign challengers and the American Aero Club very sportingly declared the race "off" for that year. And so we come to 1925.



A French representative in the 1923 Schneider Cup Race: The C.A.M.S.38 pusher flying-boat.

THE 1925 SCHNEIDER TROPHY RACE

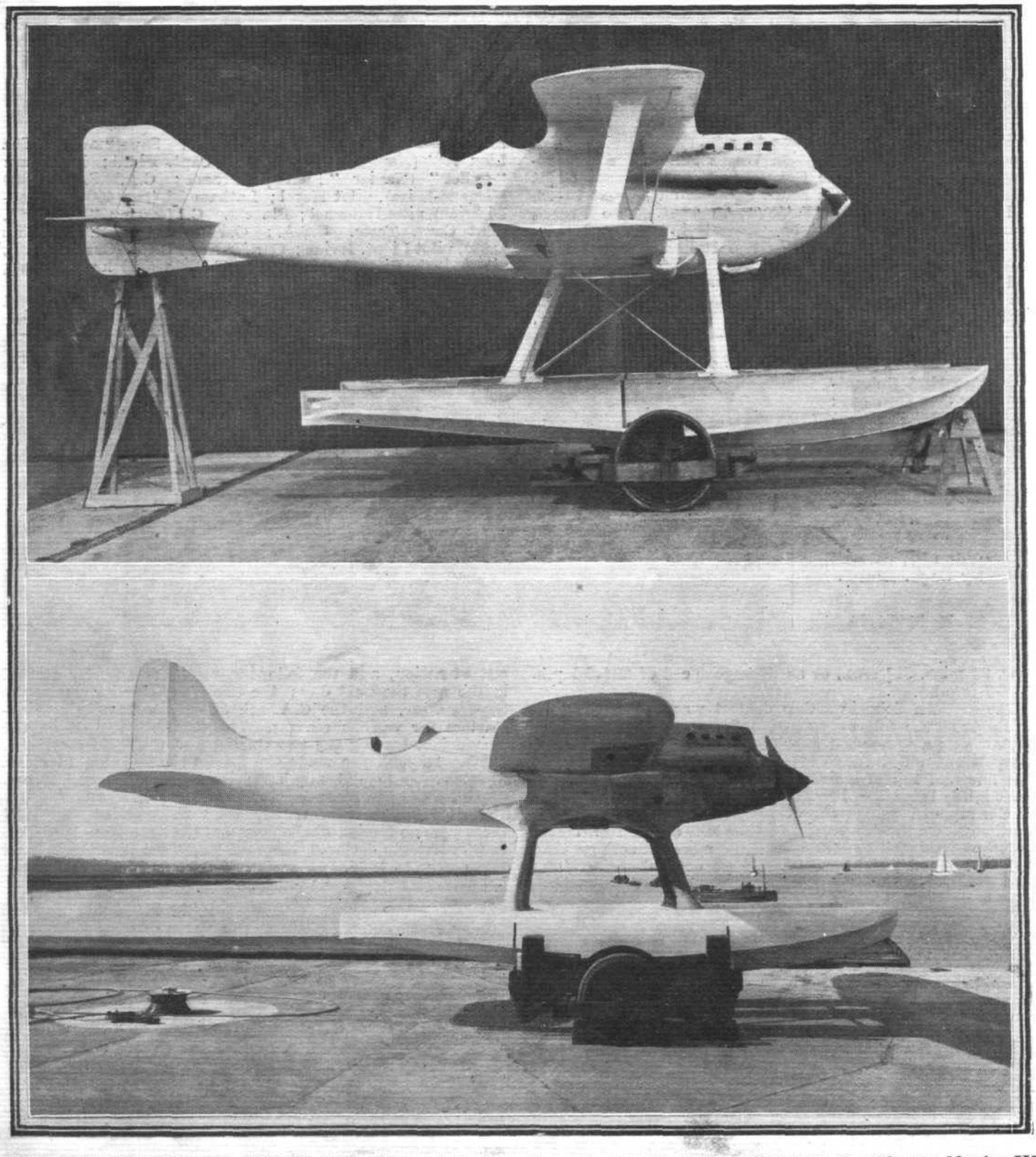
Average Speed Raised from 45·75 m.p.h. in 1913 to 232·573 m.p.h. in 1925.

THE 1925 seaplane race for the Schneider Trophy at Bay Shore Park, Baltimore, proved a great disappointment to Great Britain, two of the three British machines having been crashed before the race, and the third machine failing to put up as good a performance as had been expected. The series of mishaps which resulted in this unsatisfactory state of affairs were referred to in our issue of last week, and there is thus no need to deal with them here.

Altogether, seven machines had been entered for the 1925 Schneider Trophy race, three by the United States, two by Great Britain, and two by Italy.

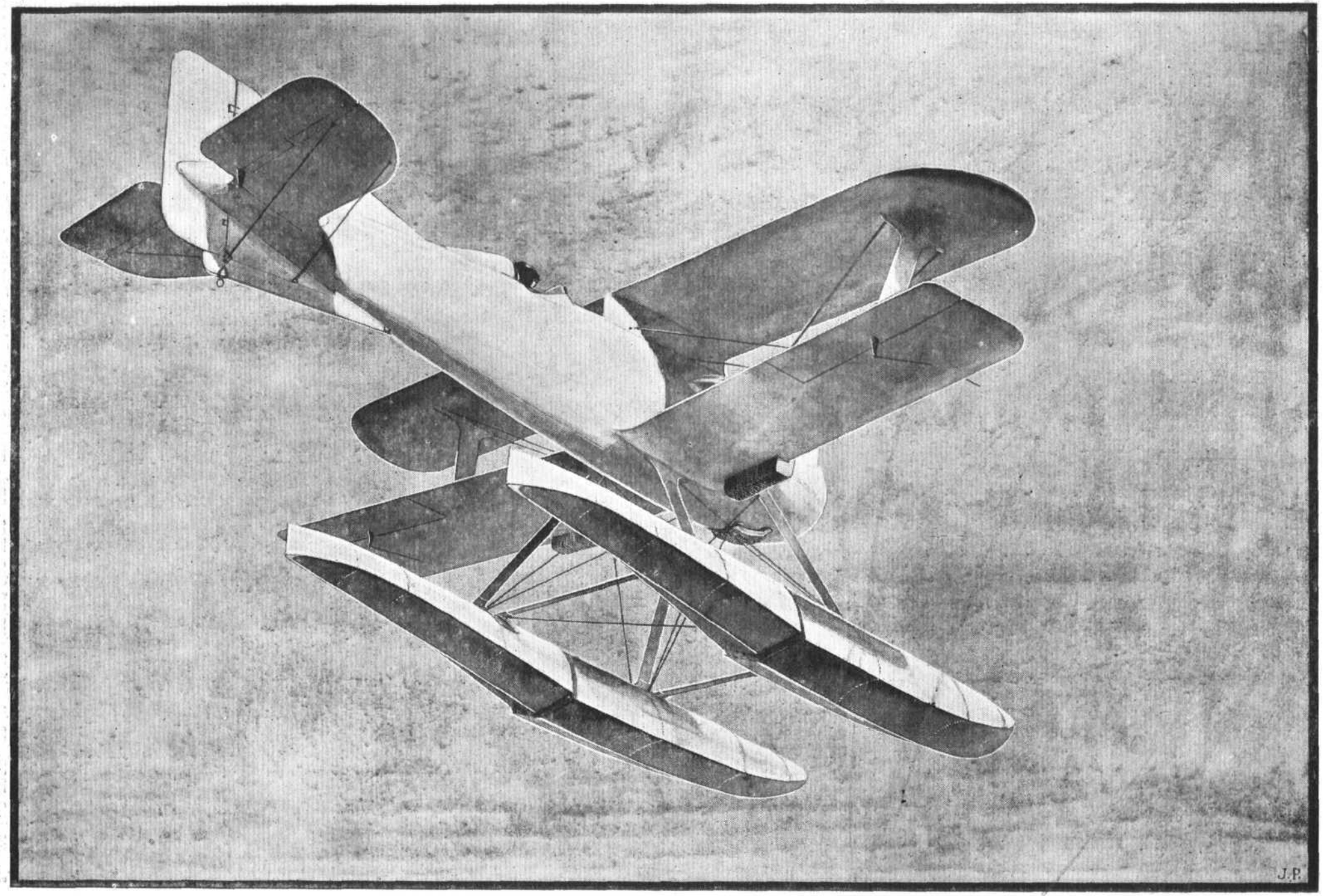
The Machines.

The three American defenders were all Curtiss racers fitted with the new Curtiss V.1400 engine. Two of them were entered by the U.S. Navy and were piloted by Lieutenants Cuddihy and Ofstie respectively, while the third machine was entered by the U.S. Army and piloted by Lieut. James Doolittle. These racing machines are known as the type R3 C2, and are the logical development of the previous Curtiss racers. Fitted with land undercarriages, the machines had taken part in the Pulitzer Race, which was won by Lieut. Cyrus Bettis at an average speed of 248·99 m.p.h.

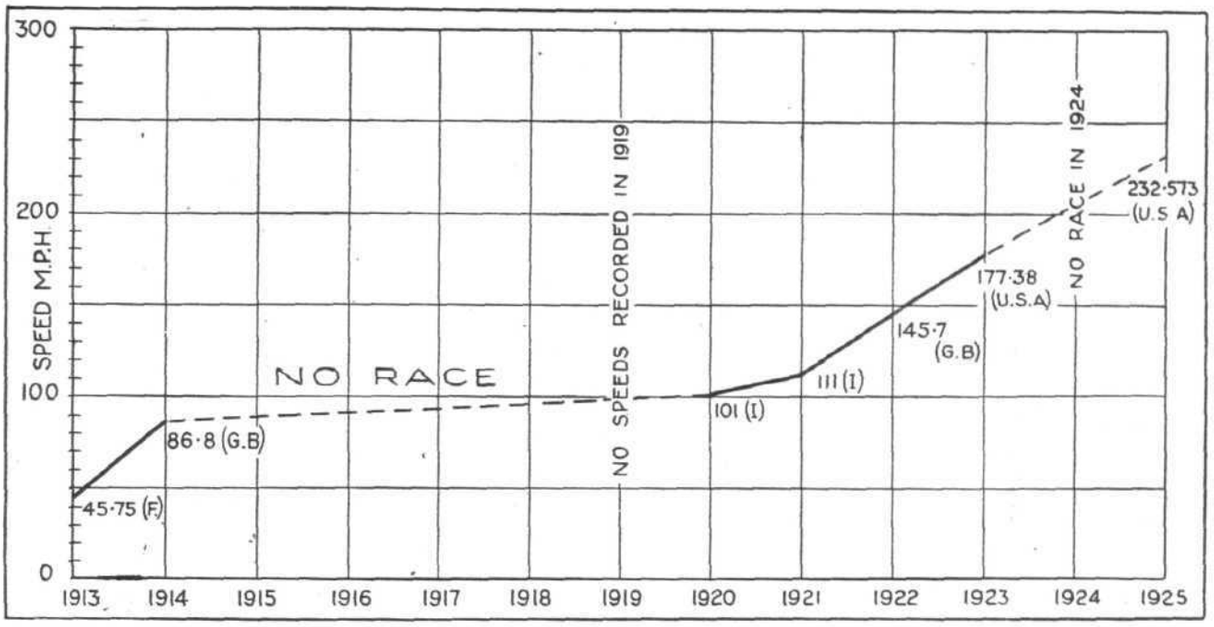


THE 1925 SCHNEIDER CUP RACE: These side views show the two British challengers, the Gloster-Napier III being illustrated in the upper photograph, and the Supermarine-Napier S.4 in the lower.

WINNER OF THE 1925 SCHNEIDER TROPHY RACE: The lower photograph shows Lieut. "Jimmie" Doolittle's Curtiss-Army Racer, on which he won the race at an average speed of 232·573 m.p.h. Inset shows the machine in flight during the race, and, on the right, Lieut. Doolittle, Mrs. Doolittle and General Mason Patrick, Chief of the Air Service, photographed shortly after the race.



THE 1925 SCHNEIDER TROPHY RACE : An impression of Captain Broad's Gloster-Napier III racer, which secured second place in the race.

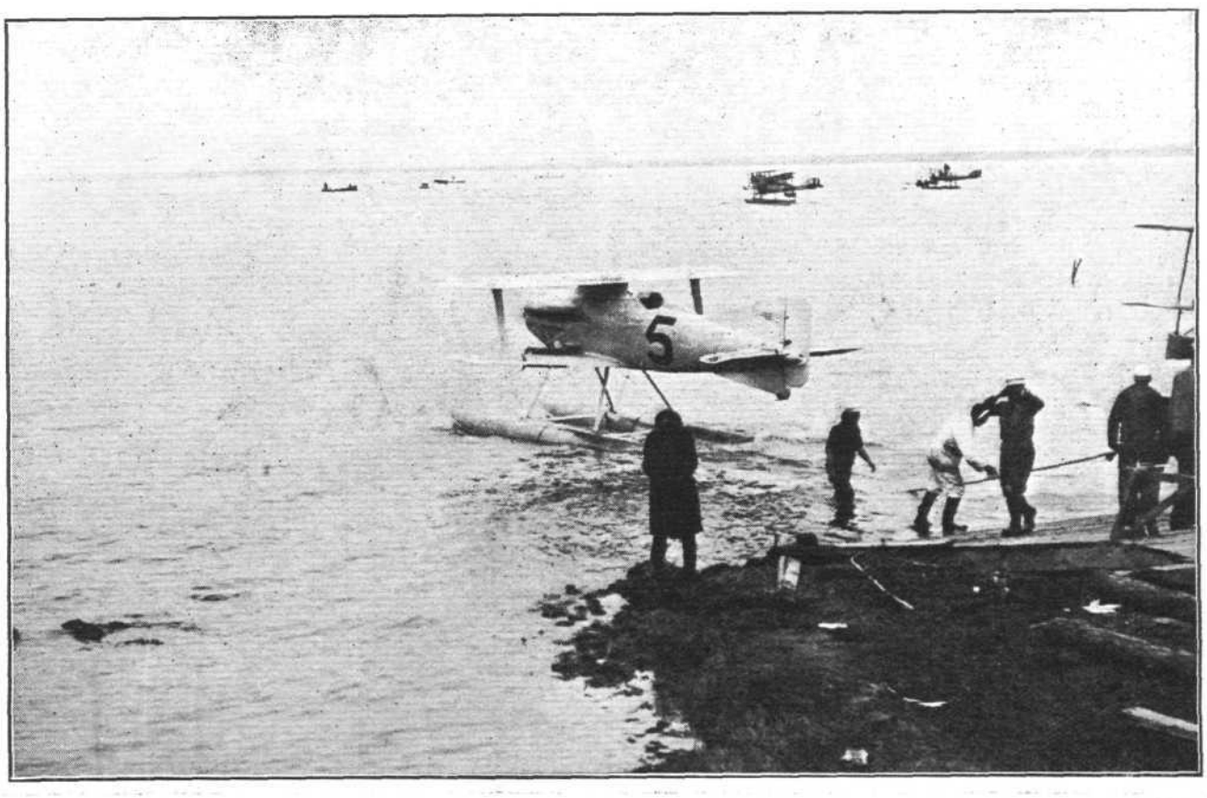


FASTER AND FASTER: This graph shows the increase in the average speed attained in the Schneider Cup Race from 1913 to date. During the war the race was not held, and in 1919, although some of the machines covered the course at Bournemouth, the judges declared "no race," so that no figures of speeds are available. In 1924 there were no foreign competitors, and the Americans very sportingly declared "no race." The figures marked along the graph indicate: G.B. = Great Britain; F. = France; I. = Italy; and U.S.A. = United States of America.

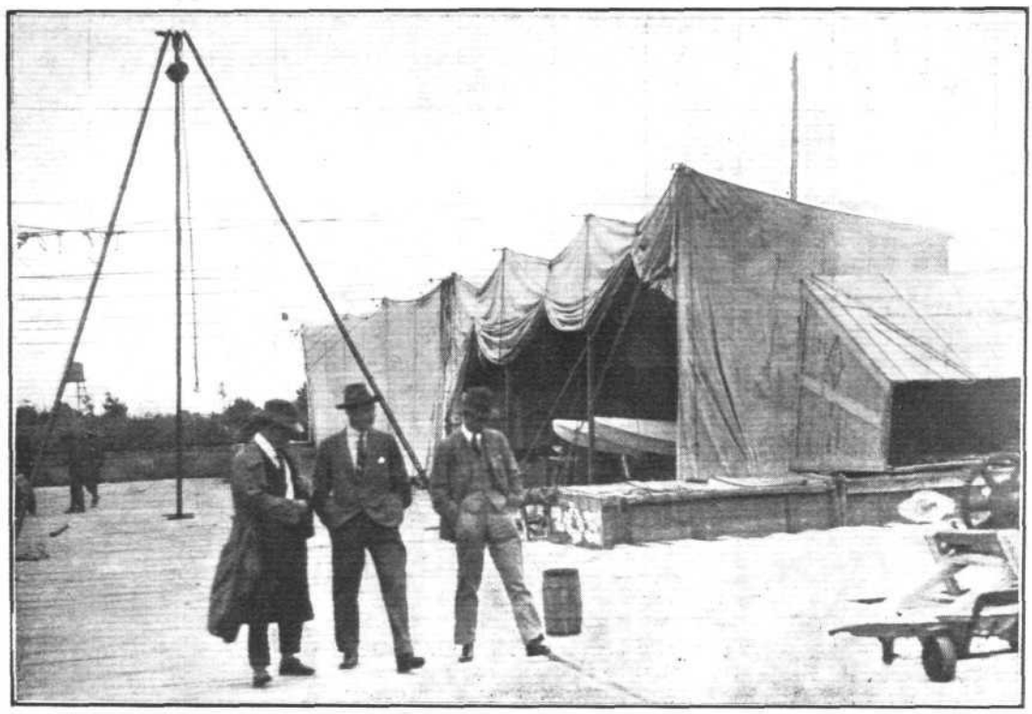
The R3 C2 is a fairly normal biplane, of exceptionally clean design and covered entirely with wood, no fabric covering being used. The Curtiss V.1400 engine, which has a small frontal area and a rather elongated shape, lends itself to very neat cowling, and head resistance is further saved by fitting wing radiators which, as they conform to the wing section, offer practically no extra head resistance. Direct drive is employed in the Curtiss V.1400 engine, and the propeller is a Curtiss-Reed made of Duralumin. The twin-float type of undercarriage is employed, and the floats are made sufficiently long to avoid the necessity of using a tail float.

The pronounced superiority of Lieut. Doolittle's Curtiss Army Racer is ascribed to the fact that this particular engine proved vastly more powerful than others of the batch of twelve constructed for the Pulitzer and Schneider trophy races. This superiority in engine power is not, however, thought to account entirely for the much higher average speed maintained by Doolittle, who is reported to have taken his corners in such a masterly way that he is estimated to have saved something like thirty miles on cornering.

Only two machines had been entered by Great Britain, since, at the time the entries list closed, there was little likeli-



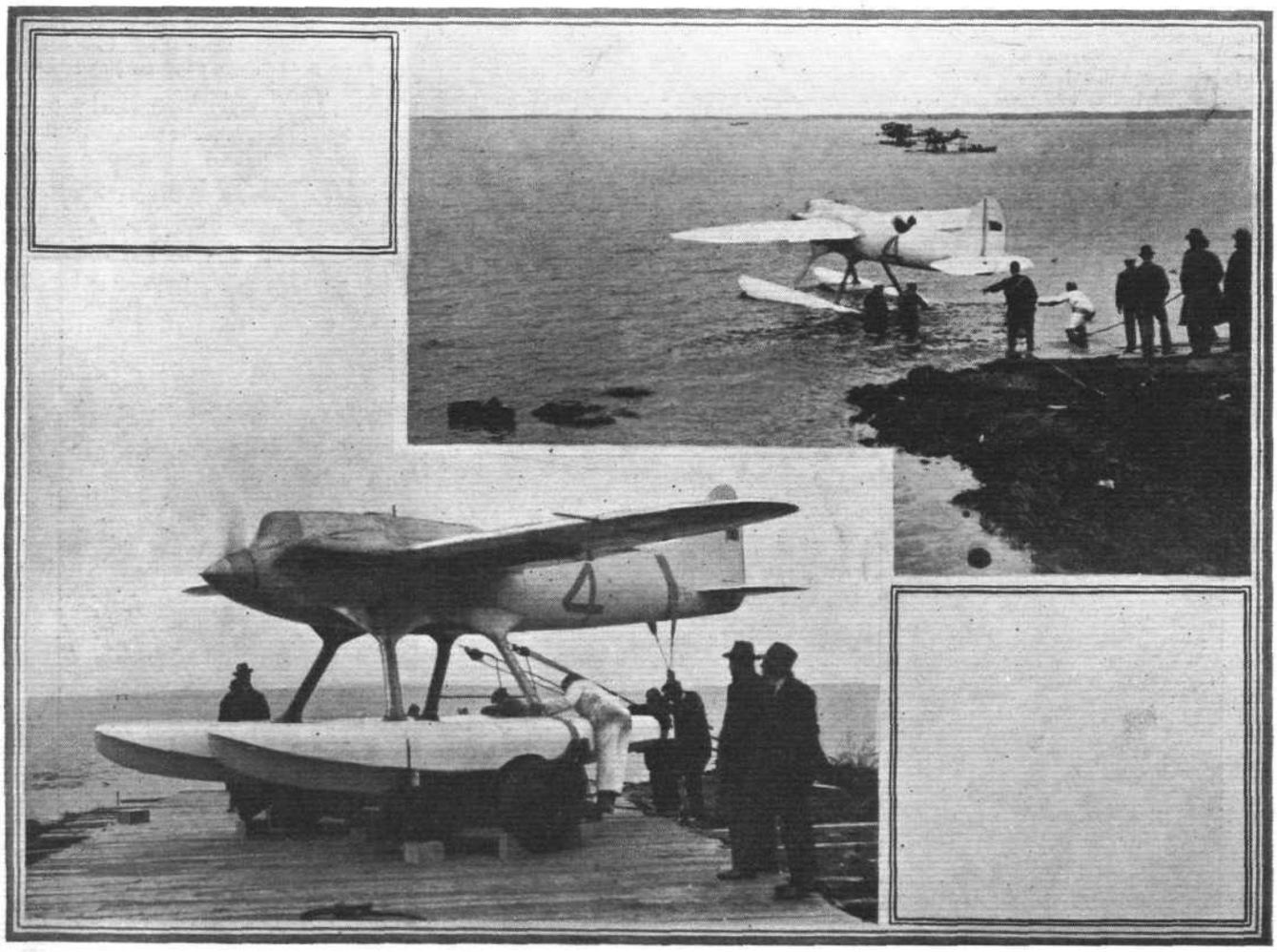
THE SCHNEIDER CUP RACE: Capt. Broad's Gloster-Napier III leaving the slipway or its first test flight. In the background may be seen the Supermarine-Napier S.4, and, on the right, some of the American seaplanes which were to take part in the demonstration planned for Schneider Cup day.



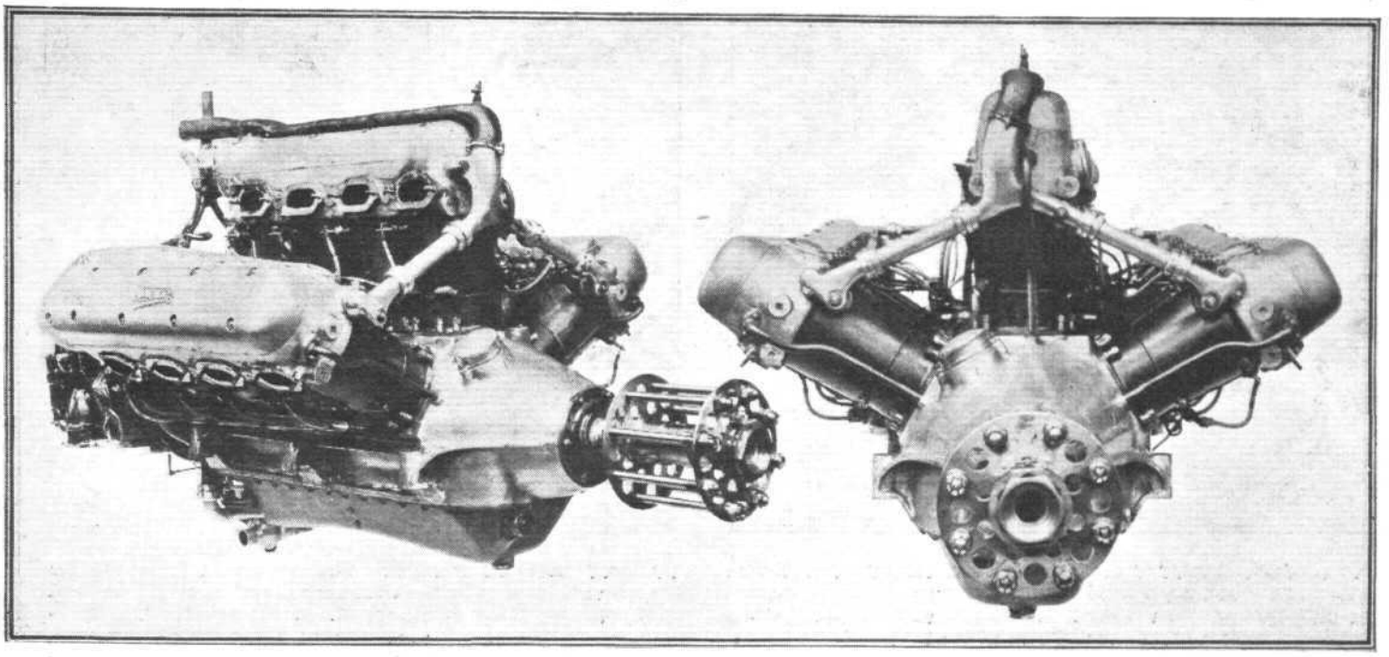
At Bay Shore Park: This photograph shows one of the tent hangars in which some of the Schneider Cup racers were housed. Walking along are Mr. Bert Hinkler, Mr. Mitchell and Capt. Broad.

hood of more than two British machines being built for the race. Actually, three machines were built, while the old Gloster "Bamel" was fitted with floats and intended to be used as a practice machine, so that altogether four machines were sent to the United States. One of these was the Supermarine-Napier S.4, two were Gloster-Napier III's, and the fourth machine was the "Bamel."

The Supermarine-Napier S.4, designed by Mr. R. J. Mitchell, and built by the Supermarine Aviation Works, is a cantilever monoplane of particularly clean design, and like the Curtiss



AT BAY SHORE PARK: The lower photograph shows the Napier engine of the Supermarine-Napier S.4 being run up, while the upper view shows the machine leaving the slipway for its first test flight.

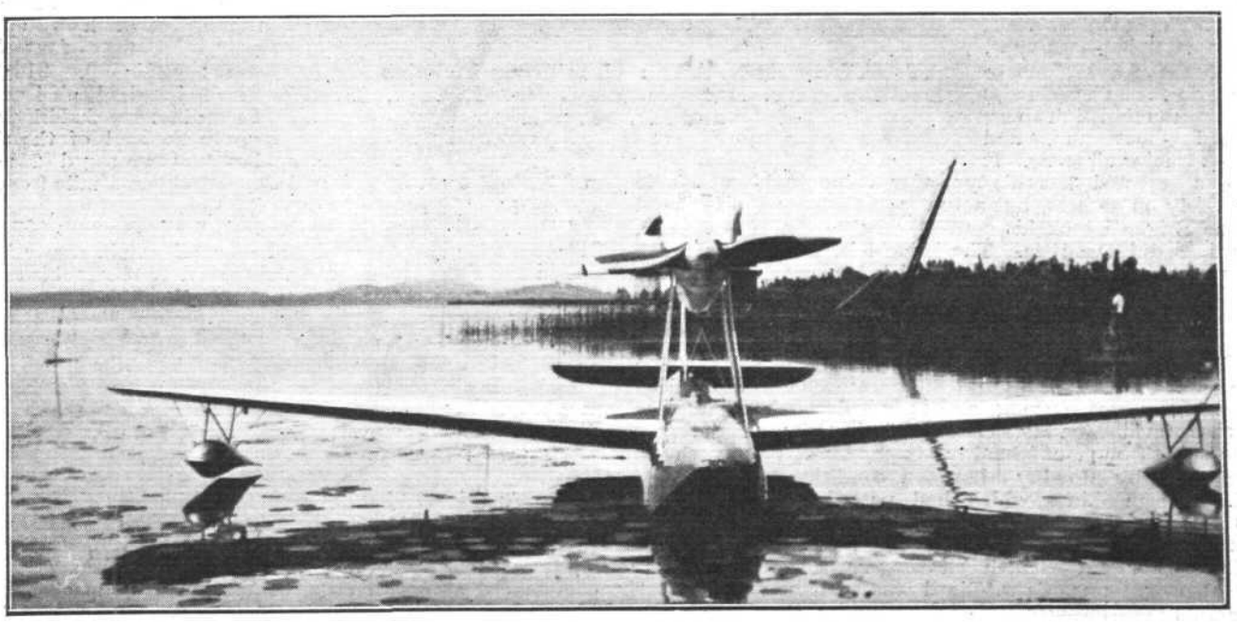


A WONDERFUL ENGINE: These two photographs show the special Napier racing engine, which is a development of the famous Napier "Lion." In the Schneider Cup Race at Baltimore this engine does not appear to have given trouble of any kind, in spite of its phenomenal power output, which exceeds 700 b.h.p.

racers, this machine is covered entirely with wood, no fabric being used. The radiators are mounted on the wings, but are different from the proper wing radiators used by the Americans in that they do project from the wing surface and thus offer a certain amount of extra head resistance. The undercarriage is of unusual design in that the four struts are high tensile steel tubes enclosed in streamlined fairings and having no external bracing. This absence of wire bracing, although loading the struts as cantilever beams, has the advantage of providing a certain amount of springing for the floats, which are free to move slightly fore and aft and laterally. The floats of the Supermarine-Napier S.4 incidentally, are made entirely of wood. The pilot of this machine was Capt. H. C. Biard, who, unfortunately, crashed the machine in a test flight, the theory being that wing flutter developed, although at the moment this has not been definitely established. Another theory is that the crash was caused by indisposition of the pilot as a result of the physical effects of flying at very high speed. It will be recalled that before leaving for America, this machine established a world's speed record of 226·752 m.p.h.

The Gloster-Napier III is the logical development of the series of racing machines designed and built by the Gloucestershire Aircraft Co., whose chief engineer and designer is Mr. H. P. Folland. Like all previous "Gloster" machines, the Gloster-Napier III is a single-strut biplane with normal wire bracing and with fabric-covered wings. To guard against the fabric getting torn off at the high speed attained, a special method of attaching the fabric has been adopted.

The floats of the Gloster-Napier III are mounted on a normal braced structure, and are made entirely of Duralumin, having been built by Short Bros., of Rochester, Lamblin wing radiators are mounted on the leading edge of the lower plane, as the special type of wing radiators now being evolved by the Gloucestershire Aircraft Co. could not be finished in time for the race. It seems likely that these radiators must offer a considerable amount of head resistance, so that what with the biplane wing bracing, the type may not be quite as fast as the Supermarine-Napier S.4. On the other hand, there is little doubt that the biplane wing truss is better able to resist torsion, so that actually around a triangular course and with pilots of equal skill, the Gloster-Napier III might



THE ITALIAN CHALLENGER: The Macchi M.33 is a flying-boat cantilever monoplane, fitted with Curtiss D.12 engine. Two machines were entered but only one took part in the race, the other having been scratched on account of engine trouble.

A MOTOR-BOAT TRIP ON THE MAGOTHY RIVER : Through running out of petrol the trip nearly resulted in shipwreck. On board the boat may be recognised Biard, Jones, Folland and Mitchell

AT BAY SHORE PARK : The group in front of the Supermarine-Napier S.4 includes Lieut. Guy Townsend (U.S. Navy), Bert Hinkler, R. J. Mitchell, T. Hildebrandt (of the Baltimore Flying Club), Capt. Biard, and Major W. D. Tipton, Secretary of the Baltimore Flying Club

prove as fast. Owing to the accidents there has been no possibility of ascertaining whether this is so or not. The pilots of the two Gloster-Napier III's were Capt. H. Broad and Mr. Bert Hinkler, but as the latter crashed his machine in the navigability tests, only Broad's machine was left in the Race.

Both the British challengers were fitted with the special Napier racing engine, which is a development of the famous Napier "Lion." As our photographs show, the racing engine has been considerably "cleaned up," and direct drive is employed, the speed being such that the tip speed of the propeller actually somewhat exceeds the speed of sound. The Napier racing engine is exceedingly light for its power, and is reported to develop round about 700 h.p. During the visit to the States the Napier engines do not appear to have given any trouble whatever.

AT BAY SHORE PARK : This group includes Lieut. Doolittle, Mrs. Doolittle, Capt. Broad, Capt. Biard and Mr. Mitchell

The two Italian challengers are Macchi flying-boats, type M.33, fitted with Curtiss D.12 engines. The machines are of the normal flying-boat type, but have cantilever monoplane wings. The Curtiss engine is mounted high above the flying-boat hull, and drives a tractor airscrew. It had been expected that this type of machine would not handle very nicely on corners, but actually in the race it was found that de Briganti took his corners very nearly, if not quite, as well as did Doolittle. The Macchi is, however, a much larger machine than the British and American, and in the race it was hopelessly outclassed.

The Race

Originally the 1925 Schneider trophy race had been planned for Saturday, October 24, but in the afternoon of that day a strong gale was blowing, and it was decided to postpone the race until Monday, October 26. Although the gale continued throughout Sunday, it moderated to such an extent that by Monday afternoon conditions were almost ideal. The machines which had passed the navigability tests on Friday, October 23, were the three American defenders, the two Italian challengers, and Capt. Broad's Napier-Gloster III British challenger. According to the original programme, Capt. Biard was to have started first, but as his machine was out of the running, the first man to cross the starting line was Lieut. "Jimmie" Doolittle on his Curtiss-Army racer, who crossed the starting line at 2.38 p.m. The remaining competitors started at five-minute intervals in the following order : Capt. Broad, Lieut. Cuddihy, Lieut. Ofstie, and Lieut. de Briganti. The second Italian pilot, Lieut. Morselli, was scratched at the last moment, as his machine had developed engine trouble.

Almost from the very beginning it became obvious that Doolittle's machine was very much faster than any of the others, and he added to this advantage by taking his corners at full speed, and so close that he was said literally not to have wasted a yard at the turning points.

Capt. Broad took his turns very wide, as did also the American pilots Cuddihy and Ofstie, while de Briganti took his comparatively large Macchi around the turning points in excellent style.

Doolittle's speeds for the first six laps were as follows : 223·157, 228·25, 230·239, 231·28, 231·705 and 232·168 m.p.h. Cuddihy's speeds over the first four laps were : 211·590, 216·254, 219·404 and 219·404 m.p.h. In the last lap Cuddihy, who up to the end of the sixth lap had averaged 220·452 m.p.h., had to make a forced descent about a mile from the finishing line, having run out of petrol.

Lieut. Ofstie's speeds for the first five laps were : 207·959, 213·453, 215·264, 217·155 and 218·307 m.p.h. respectively, but in the sixth lap he also was forced to alight, his engine having run dry and seized.

As regards Capt. Broad, figures are available for the first four laps only. These were made at the following speeds : 194·275, 196·432, 198·104 and 198·921 m.p.h.

Lieut. Doolittle's speed for the whole course was 232·573 m.p.h. Capt. Broad's average was 199·169 m.p.h., and Lieut. de Briganti's average was 168·444 m.p.h., so that the placing was : Doolittle first, Broad second, and de Briganti third.

The Americans, having won the Schneider Cup twice in succession, will become the permanent holders of the cup should they win it again next year, and if Great Britain really intends to make a bid for the trophy, work should be commenced at once on the design of our 1926 challengers. Not only so, but if possible this year's machines should be repaired so that pilots may have an opportunity of practising on them, not only for straightforward flying, but also for practising cornering.

FLIGHT

THE EVOLUTION OF THE CIERVA "AUTOGIRO"

These illustrations have been prepared from the Lantern Slides shown at Senor de la Cierva's Lecture before the R.Ae.Soc.

This series of photographs shows the different types of Autogyro designed and tested by Senor de la Cierva, and which may be said to mark the different steps in the evolution of his machine as it exists to-day. Autogyro No. 1, shown in Fig. 1, had two four-bladed windmills revolving in opposite directions and rigidly braced to the central pillar. Note the single vertical aileron above the windmills. It was found that the lower windmill was less efficient than the top one owing to interference. Autogyro No. 2, shown in Fig. 2, had three blades the incidence of which was under the control of the pilot. It was found that the machine always tended to tilt over to the side on which the blades travelled contrary to the direction of flight. Fig. 3, shows Autogyro No. 3, which had five blades rigidly braced by streamlined wire. Lateral control was by the differential action of the divided elevator but this was not effective enough and the machine tended, although to a smaller extent, to fall over sideways. While still working on No. 3, Senor de la Cierva conceived the idea of stabilising his machine by hinging the blades to the axle, and this was done in No. 4, which is shown in Fig. 4. Lateral control was provided by tilting the axis of the windmill, but it was found at once that the pilot's strength was insufficient to work the controls. A rebuilt machine, shown in Fig. 5, was provided with two small non-lifting ailerons carried on streamlined spars, the windmill axis being rigidly fixed. The machine shown in Fig. 5 made several successful flights, the first being made on January 31, 1923, and being of four minutes duration. Autogyro No. 5, shown in Fig. 6, incorporated the same principles, but improvements were effected in the detailed design. This machine had only three blades, and also made several successful flights. It was, however, damaged very badly while taxying. By this time the Spanish aeronautical authorities took over the further development of the Autogyro, three machines of the type 6 being built of which the third is that now being tested at Farnborough.

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"Practical Flying"

WE would remind our readers that it is on Tuesday of next week, November 10, that Mr. M. L. Bramson will read his paper on "Practical Flying," before the Institution of Aeronautical Engineers. Hitherto the meetings of this Institute have usually been held on Fridays, and a note should be made of the change in day. Also the meeting will not be held at the Engineers' Club, as hitherto, but at the Junior Institution of Engineers, 39, Victoria Street, S.W.1. This applies to all the meetings of this Society during the present season. The meeting will commence at 6.30 p.m., and non-members can obtain tickets from the Secretary, 60, Chancery Lane, W.C.2.

AIR SURVEYS IN BURMA*

By Maj. C. K. COCHRAN-PATRICK, D.S.O., M.C.

AFTER briefly outlining how the Burma (Irrawaddy) survey originated—from a suggestion by Mr. C. E. Hay, of the India Forest Service—and got going in the beginning of 1924, Maj. Cochran-Patrick referred to the personnel and equipment. The former comprised Mr. Ronald Kemp—to whom the contract had been given on the combined action of the Survey of India and the Burma Forest Department—Flying Officer J. Durward (R.A.F. India), the author, two European fitters, one rigger and one camera repairer and general photographic assistant. The latter consisted of the following: One complete seaplane and a second practically so—these were standard D.H.9's (Siddeley "Puma") fitted with floats. To improve the view holes were cut in both lower planes, and in addition to the standard instruments an aperiodic compass was fitted and an aneroid with 100 ft. divisions was substituted for the 200 ft. one. The pilot had a stop watch and an exposure indicator.

At the beginning an Aldis optical sight (on pilot's right) was fitted, and also a negative lens, with movable drift wire operated by a Bowden cable—but the only sight actually seriously used was formed by the side of the floats, a straight line between the top edge of the pilot's cockpit and the bottom inner edge of the float gave just the correct angle for a 30 per cent. overlap using the 4-in. side of the plate with a 6-in. lens.

The camera was fitted in the observer's cockpit—first at the after end, subsequently at the forward end. Other accessories consisted of a stop watch and a sighting arrangement of Flying Officer Durward's own design. Standard L.B. type cameras, with 6-in. Ross lens, were employed at first. The standard camera mounting, being too large and clumsy, was cut down and fitted with a quick adjustment, altering the angle laterally as well as fore and aft.

Maj. Cochran-Patrick then gave a brief description of their base at Monkey Point, 3 miles from Rangoon. The area to be surveyed was located 90 miles south-west of Rangoon, and the country between was intersected with waterways, in any of which a landing would have been possible. The actual area consisted of a number of large islands divided from each other and intersected by innumerable channels through which the Irrawaddy flowed into the sea. The ground was flat—not more than 5 ft. above water level—covered with dense growth, mostly cougun, except in the small Lebyauk Reserve area. A river steamer, with petrol, tools and spares acted as a depot ship.

Operations were started on February 19 without, as time was precious, experimental co-operation work over a surveyed area. On the first flight some test photographs were taken at different altitudes, and the area examined generally. As a result it was decided to photograph from 10,000 ft. by aneroid and to strip east and west, dividing the area into three groups of islands and the Lebyauk area. In areas furthest from Rangoon they landed beside the depot ship for replenishments. The procedure of operations was as follows: They left Rangoon about 9 a.m. and after an hour's flight arrived at the scene of operations. They then flew level until camera and sights were properly adjusted, then started work until the exposing of plates was finished.

Maj. Cochran-Patrick then described in detail the exact method used, taking a case of stripping east to west, working towards the south. Flying up to the position, for the first strip, he started to fly along it at the judged correct drift angle. Looking ahead along the line he memorised one or two points over which to pass and the final point over which to end. He then held the machine steady on a compass course until he saw the exposure indicator move, when he at once started the stop watch and sighted to the south past the float, memorising a point on the ground in line with the sight. Straightening the machine up he waited for the next exposure, when he knew by the stop watch the interval for this strip.

The length of the strips worked out at about 10 to 12 miles, and during this distance from one to four points to the south were memorised according to the state of visibility and steadiness of the wind. At the end of a strip a point was noted past the overlap sight to the south. The machine was turned as quickly as possible and flown back on to this point, this time sighting it to the north. A straight course was then kept by judgment until the compass had settled down, then they continued as previously detailed. Photography usually lasted about three hours.

The author next referred to the various operations carried out and the areas photographed, which he summarised thus: the entire area of approximately 1,400 sq. miles was covered in 17½ flights, and gaps filled and tie lines taken in 6½ further flights. The actual time occupied on photography (excluding time flying to and from area) was 43 hours 15 mins., and 17 hrs. 50 mins., respectively During operations considerable alterations were made to the camera and shutter, the standard focal plane self-capping variable, slit-shutter proving unsatisfactory.

Major Cochran-Patrick then dealt with the work done besides the actual photography—ground work, ground control, mapping, etc. Having exposed 3,795 plates on the Delta Reserves, prints had to be produced in quantity. A considerable amount of shading was necessary to bring out forest detail, and special printers had to be constructed. With five native photographers, as many as 800 prints per 24-hours were worked up.

Ground control was carried out under great difficulties, by Major Lewis, who had taken his party down to the Delta before operations commenced. The author pointed out that in view of the difficulties encountered, the average closing error of just over half a chain on the main circuits (70 miles average) was distinctly good.

The final map was prepared by tracing from a scaled and rectified mosaic, made from two sets of contact prints as follows:—Prints were pinned down on cardboard sheets in 2 ft. strips in order taken. One set was put aside for interpretation of detail, the other was carefully examined and where necessary details inked in in white. These strips were then re-photographed (3 or 4 at a time) at a reduction of 5 times. The re-photographed strips running round the coast, covering control points, were then enlarged to correct scale (3 in.—mile) to fit points. The complete control system was plotted on cardboard sheets and correctly scaled strips were fitted on these sheets.

Errors in azimuth caused by tilt were corrected by cutting the scaled strips in sections and slewing these through small angles. Perimeter strips having been placed correctly, longitudinal tie strips and certain selected cross strips were scaled by using any convenient points on the perimeter strips and laid down. These then formed a grid into which the remaining strips were fitted by trial and error. Prints were temporarily pasted in position, and on completion of a section the whole were pasted down and butt-jointed.

Here the author gave details of the errors etc., which were by no means excessive—Major Lewis stating that in his opinion the maximum error in position anywhere, with reference to the grid, would not exceed 5 chains.

Two further sets of prints were supplied to the Burma Forest Department to prepare the forest stock maps of the area. In addition a complete index mosaic of the whole area from contact prints, was prepared and supplied.

Major Cochran-Patrick then described other small surveys carried out. A mosaic was prepared for the Admiralty of country surrounding their local works; a small mosaic (to scale) was prepared of a timber dump of the Bombay-Burma Trading Co. They next took in hand the production of a 12-inch to the mile scaled and rectified mosaic of Rangoon and surrounding country for the Rangoon Development Trust. The area comprised 70 sq. miles, and a series of plates were taken with the 6 ins. lens at 8,000 ft. and a few with a 10 in. lens from 9,000 ft.

After giving some further details of this survey, the author proceeded to deal with the 1925 season's work. The machines were re-erected, and a start was made to supply photographs to the Survey of India for a 24-inch survey of the oilfields at Yenanyaung. Bad weather delayed the start for a week.

This survey was successfully accomplished, and they then commenced work on the principal contract of the season—the forest stocking of 15,000 square miles of South Burma. This area stretched from Heinze Bay to Victoria Point, a long, narrow strip bounded by the coast to the west, and the high hills of the Siamese border to the east. Regular communications were practically absent in this area, and as time was short, they had to establish a series of bases from which to work. For this purpose Mr. Kemp brought out from England a converted naval pinnace boat, fitted with a paraffin engine.

* Extracts from a paper read before the Royal Aeronautical Society Oct. 15.

Maj. Cochran-Patrick described the operations of this survey in detail, and as his account contains much of considerable interest, and lack of space prevents our quoting him in full in the present issue of FLIGHT, we propose to publish this portion of his paper, separately, in a future issue. However, it may be stated here that operations started on January 10, and after many exciting adventures they returned to Rangoon on April 14, during which time they had stock-mapped 15,178 square miles in 57 hours 14 mins. of actual reconnaissance flying—or 265 square miles per hour! In conversation with forest officers and others, the author gathered that the work they had accomplished in three months would have taken about twenty years if done by the forest staff usually allotted to an area of that size.

Concluding his interesting paper, Maj. Cochran-Patrick stated that the practical experience gained in Burma, Venezuela, and British Guiana had emphasised many points which, for the sake of economy, had to be studied in carrying out a survey. Many of these points were not immediately obvious when the subject was approached from a purely technical point of view, but by adopting new and different methods to those described, they were confident that they could reduce the cost while improving the accuracy of small-scale aerial survey.

With this end in view he was at present carrying out research work with the Aircraft Operating Co., and they were proposing to put the results of this work into operation at an early date.

AIR SURVEYING*

By Major H. HEMMING, A.F.C.

MAJOR HEMMING opened his address by stating that he had been asked to read this paper on Air Survey by the Air League of the British Empire, of which he was a member of the Executive Committee. He said he did not propose to deal with the scientific side of aerial survey, but as he had, together with his colleagues, been intimately connected with some of the actual operations, he would confine himself to the practical side of this work. Air surveying had, and still had, its battles to fight, but it had now passed through the purely experimental stage and one could point to work that had been carried out successfully and received the approbation of the ground surveyor.

As progress had been retarded by a tendency to confuse air mapping with air photography and reconnaissance of forest areas, Major Hemming said he proposed to divide into their respective departments all these branches which had been described under the common heading of "Air Surveying," as follows: (1) Commercial air photography, which included the photographing of factories, towns, roads, railways, docks and estates, etc., for which the oblique method was usually employed. Major Hemming then mentioned a few examples of the various uses to which commercial air photography had been put, showing that the public were greatly appreciating the new viewpoint provided by the aerial photograph, by the steady increase of business and the inclusion of air photography in contractors' catalogues and in the public Press.

A considerable amount of unrectified photo-mosaic work had also been done by commercial air photography concerns which did not call for any knowledge of ground surveying, as it merely consisted of a series of vertical overlapping photographs fitted accurately together to coincide with the map or plan on which they were subsequently mounted. This had proved very useful in the development of estates, drainage power schemes, and for making pictorial maps generally.

Under the second heading, Major Hemming classed reconnaissance and forest surveying. This employed various methods, the ground surveyor or forest officer flying over the area and filling in the detail required on the existing map whilst in the air, and supplemented by vertical and oblique photographs. In certain cases these observations were supplemented by ground observations. This class of work had been found to be of great value in development work in the Colonies. Air reconnaissance and photography was also a valuable aid to the preliminary considerations of colonisation and settlement schemes, whilst another application was the survey of crops, enabling an estimate to be made of the likely yield.

Major Hemming then came to the third heading, which was air mapping or air survey proper. Although, said Major Hemming, thoroughly satisfactory methods had been employed, the science was still in its infancy and scientists in various parts of the world were engaged in producing instruments which should make air mapping part of the normal function of the ground surveyor.

Air mapping could, however, immediately confer valuable benefits in many cases, rendering possible the surveying of countries on an economical basis which had hitherto defied the ground surveyor. Work done within the British Empire included small scale work over large tracts of unsurveyed and open country, and large scale work of a very high order of accuracy for town planning, map revision, tax assessment, etc. In the former, the oblique or vertical method could be employed or a combination of both. For fairly flat, heavily wooded or swampy country the saving in cost between the air and ground methods might be enormous.

Major Hemming said he could not read a paper on air surveying without touching upon the subject of contouring. At present, so far as he knew, no real economical and satisfactory method had been devised for accurate contouring from the air. Various methods were found which gave a very high order of accuracy, but they depended for their accuracy on a close handwork of control points which for financial reasons alone put them beyond the reach of the air surveyor engaged in mapping. He was confident, however, that it was only a matter of time before contouring from the air would become a commercial proposition.

In order to illustrate the utility of air surveying further, Maj. Hemming then gave some examples of work carried out within the British Empire. Unfortunately, space will not allow us to quote these examples in full, especially as a great part of the information regarding the work done in Canada has already been published in FLIGHT, whilst the work accomplished in Burma is described in Maj. Cochran-Patrick's paper, read before the Aeronautical Society, which will be found elsewhere in this issue. Maj. Hemming stated, however, that, besides the work done in Canada and Burma, a considerable amount of air-survey work had been carried out by the Royal Air Force, although it had now been recognised by the authorities that such work should merely be used for military purposes, and that the commercial side of air survey would in future be left to private enterprise. He was not in a position to give details of the actual work carried out, but he would mention that considerable areas had been mapped in Iraq, Palestine, and Singapore, as well as portions of the Nile. In addition to this, the Royal Air Force (India) had, during the last few years, completed a number of air surveys in the North-West frontier region and had also carried out several surveys of Indian cities, for both strategical and tax-assessment purposes. Another place where an interesting air survey had been carried out was on the north-east coast of Australia, where the Australian Air Force, in co-operation with the Australian Navy, had helped in the survey of the Great Barrier Reef. He understood that, as a result of this preliminary work, a survey of the entire reef would be undertaken.

As regards the British Isles, Maj. Hemming said that most of the work done had been of a commercial nature in connection with town development and planning schemes, factory advertising, engineering propositions, etc. Some interesting archæological studies had also been carried out by aerial photography. A contract had lately been given to the Aircraft Operating Company for an experiment in connection with the revision of the Ordnance map of Great Britain by the use of aerial photography, and work in this connection was now proceeding.

In conclusion, Maj. Hemming said that it was now generally recognised by the authorities that aerial surveying had a great future in the British Empire, and he looked forward with confidence to the extension of this work all over the world, for he saw in aerial surveying a means of making civil aviation pay, as it was independent of subsidies on the one hand, while the valuable research work that was being carried out by the different nations who were represented at the Congress held out great promise for the future.

* *Résumé* of a paper read at the Third International Air Congress, Brussels.

LONDON AEROPLANE CLUB

DURING the week flying was only possible on three days and the total flying time was 16 hrs. 25 mins.

The following members were under instruction :—N. Jones, G. W. Quirk, G. H. Craig, R. V. Banks, Mrs. Eliott-Lynn, N. J. Hulbert, P. G. Lucas, W. E. P. Johnson, R. P. Cooper, Major Beaumont, R. Thomas, D. P. H. Esler, E. S. Brough, G. N. Warwick, J. S. M. Michie, J. Barros, J. A. R. Stevenson, W. Roche Kelly, E. K. Blyth, A. R. Ogston, E. D. Moss, R. J. Bevington.

P. G. Lucas, N. J. Hulbert, G. N. Warwick, and Mrs. Eliott-Lynn all flew solo during the week.

On Friday, October 30, Mrs. Eliott-Lynn commenced the tests to qualify for her Aviator's Certificate. Having completed the figures of eight she went up for the height test. Shortly after starting it became misty and it was impossible to see the aerodrome at a height of 1,000 ft. After making three landings to ascertain her whereabouts, Mrs. Eliott-Lynn eventually came down at Slough, where the machine was housed for the night and it was flown back to Stag Lane aerodrome on the following day by Mr. Witcombe, the pilot instructor. During the flight Mrs. Eliott-Lynn reached 6,000 ft. and proved herself thoroughly capable of handling the "Moth" by selecting suitable places for landing and getting off.

THE ROYAL AIR FORCE MEMORIAL FUND

A MEETING of the Executive Committee of the Fund was held at Iddesleigh House, on Wednesday, October 21. Lord Hugh Cecil was in the Chair, and there was a very full attendance of Members of the Committee.

The Committee approved of the issue of Grants made by the Grants Sub-Committee and the Secretary between the period July 1 to date, and which amounted in all to £1,626 11*s.* 2*d.*

Air Marshal Sir John Salmond, Chairman of the Vanbrugh Castle School Sub-Committee, obtained the sanction of the Executive Committee for the expenditure of a sum of money for improving the School as regards the provision of a Sick Bay, a new Class Room and a Fire Staircase. The School is at present full, forty boys being in attendance.

It was reported that between July 1 and the date of the Meeting, the Grants Sub-Committee, of which Lieut-Comdr. H. E. Perrin is Chairman, has dealt with, at their Meetings, 120 cases, and that in the same period the Secretary had dealt with 94 cases.

Three applications for assistance in an educational sense from the Salting Benefaction were put forward and recommended by the Grants Sub-Committee, and were approved by the Executive Committee.

As in the past two years, the Committee authorised the purchase of a wreath to be placed at the foot of the R.A.F. War Memorial on the Victoria Embankment on Armistice Day, November 11, 1925, and it is hoped that the Chief of the Air Staff, Air Chief-Marshal Sir H. M. Trenchard, will, as in the past two years, perform this ceremony.

With regard to the Scottish National War Memorial, which is being erected in Edinburgh in memory of Scots of all services who fell in the Great War, and with special reference to the R.A.F. Bay, the Committee were informed that the work was proceeding and the Secretary was directed to furnish to the Committee of the Scottish National War Memorial the subscription from the Memorial Fund, which was authorised at a Meeting of the Executive Committee on July 1 last.

Similarly, it was reported to the Committee that a Panel, to be erected in the Royal Military College, Sandhurst War Memorial Chapel, and towards which the Executive Committee are contributing the cost, is likewise in process of being erected.

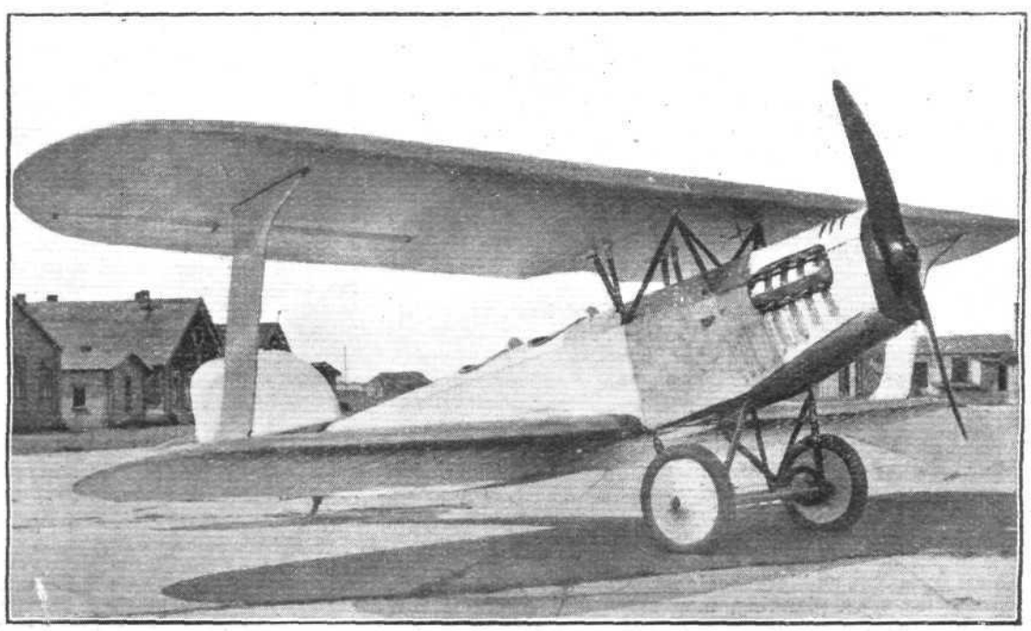
The next meeting of the Executive Committee of the Fund will take place on December 16, 1925, at 3 p.m.

The usual meeting of the Grants Sub-Committee of the Fund was held at Iddesleigh House on October 29. Mr. Walter S. Field was in the chair, and the other members of the committee present were Mrs. L. M. K. Pratt-Barlow, O.B.E., and Squadron-Leader E. B. Beauman. The Committee considered in all 12 cases, and made grants to the amount of £118 15s. The next meeting was fixed for November 12, at 2.30 p.m.

R.A.F. War Memorial, Victoria Embankment, London

THE Executive Committee of the Royal Air Force Memorial Fund wish to announce that on Wednesday, November 11, a wreath will be deposited at the memorial at 11.45 a.m., by the Chief of the Air Staff, Air Chief-Marshal Sir H. M. Trenchard, Bart., G.C.B., D.S.O. The Air Chief-Marshal will be accompanied by the Chaplain-in-Chief, Royal Air Force, and a small personal staff, and by members of the Executive Committee and others, and the ceremony will be quite informal and very brief. All relations and friends interested are invited to attend. Should any relatives or friends living at a distance from London desire to send wreaths to be placed on the memorial, the Secretary of the Fund will be pleased to do so, but it is essential that any such wreaths should reach him at the offices of the Fund at 7, Iddesleigh House, Caxton Street, London, S.W.1, not later than 4 p.m., on November 10.

Napiers in Sweden: This photograph shows the Heinkel-Napier two-seater reconnaissance biplane recently built under licence in Sweden. The machine is stated to have a top speed of 152 m.p.h. and a ceiling of 26,000 ft.



FLIGHT

To be Married

The marriage between Squadron-Leader WILLIAM ALEC CORYTON, M.V.O., D.F.C., and Miss PHILIPPA DOROTHEA HANBURY will take place on December 19 at Minstead.

The engagement is announced between Flight-Lieut. VIVIAN STEEL PARKER, R.A.F., only son of the late Mr. Vivian Parker and Mrs. O. Parker, of 192, Marylebone Road, W. 1, to FRIEDA MARY, only daughter of Mr. and Mrs. J. J. RACKHAM, of Halstow, Bickley, Kent.

Death

The death occurred on October 14, at Hayling Island, of GRAHAM GOODNOUGH MCHARDY, Captain, R.A.F. (retired), son of the late Capt. Hardy McHardy, R.N.

Endurance Flights by Vickers "Virginias"

As the culminating exercise of their training for this season, two of the long-distance bombing squadrons of the Home Defence force recently carried out endurance flights between their home aerodromes, in Kent and Hampshire respectively, and Leuchars in Scotland.

Both Squadrons are armed with Vickers "Virginia" aeroplanes, equipped with 2 Napier "Lion" engines of 450 h.p. each, and as this was the first occasion on which any attempt had been made to extend these bombers to the limit of their endurance, the results were awaited with considerable interest.

Five pilots left Manston at 2.35 a.m. on September 24 for Leuchars, and arrived at their destination at 9.30 a.m., no trouble having been experienced during the journey.

Flares were lit at aerodromes on the route as a precaution against forced landings, but the engines all ran satisfactorily and the only landing was made voluntarily at Brough with the object of remedying wireless trouble.

The bombers maintained constant communication by wireless with their home station throughout the flight.

After a short stay at Leuchars, the five aeroplanes left in company at 1 p.m., and arrived at Manston at 5.20 having experienced no trouble of any sort on the way.

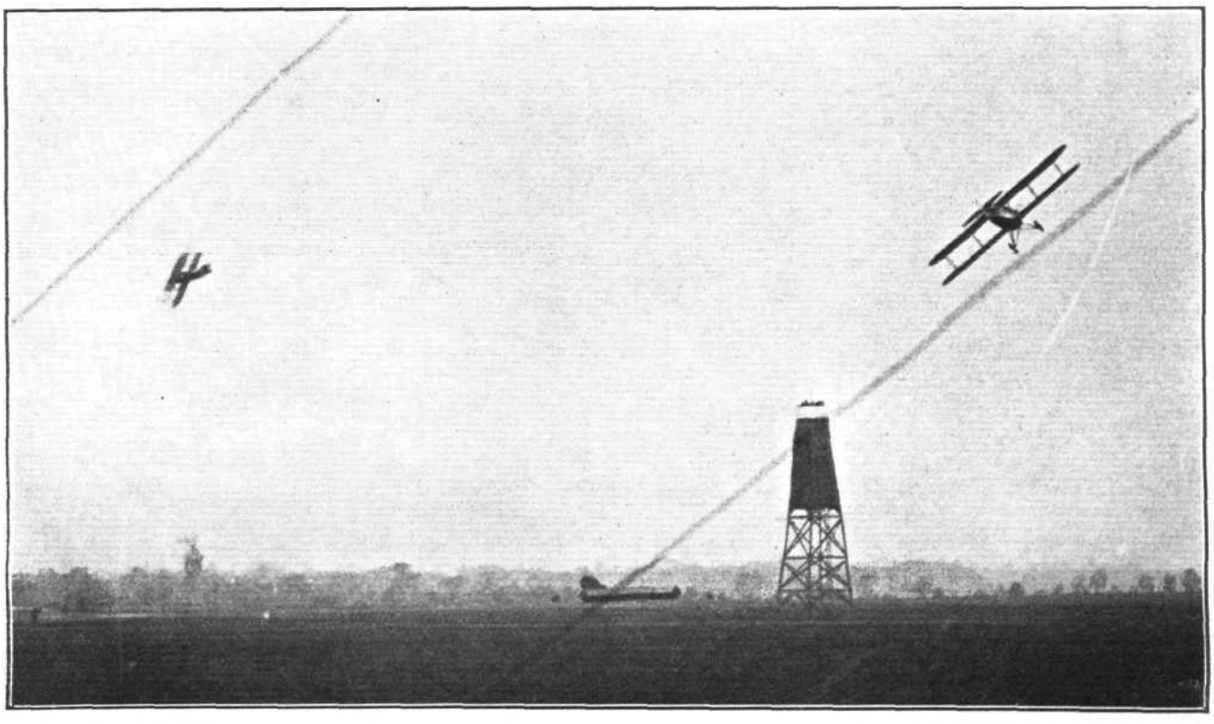
With the other squadron, the intention was to fly from Worthy Down, near Winchester, to Leuchars and back without refuelling. The operation took place on September 3, eight aeroplanes being employed, and although a strong northerly wind prevented the accomplishment of the original idea, by delaying the first part of the journey, two pilots reached Edinburgh and returned to Winchester, a third reached Edinburgh and returned to Bedford, while another reached Leuchars and returned as far as Spittlegate in Lincolnshire before having to refuel. One pilot succeeded in remaining in the air for 12 hrs. 15 mins., with no special tanks and carrying a full crew.

R.33 Out Again

THE British rigid airship R.33 was out again over Pulham on October 28, carrying out tests with the aeroplane-launching experiment. The test was of short duration, however, owing to a slight mishap to the trapeze gear when the aeroplane was attempting to re-hook. Both airship and aeroplane returned to port without damage.

Tokyo-Rome Dash

MARQUIS DE PINEDO and his mechanic Campanelli are making rapid progress on their return flight, in the Savoia S.16 *ter* flying boat (400 h.p. Lorraine-Dietrich), from Tokyo to Rome. On October 28 the Marquis flew from Rangoon to Calcutta, landing at Akyab *en route*. At Calcutta they were entertained at dinner by the Italian colony, in the course of which the Marquis pointed out that he had already covered a distance of 28,000 miles, and had therefore beaten the American round-the-world record by over 1,200 miles. The following day he proceeded to Benares, and next day arrived at Delhi. By November 2 he had reached Bandar Abbas, via Karachi.



AT THE NEW YORK AIR MEET: Two Curtiss P.W.8's rounding a Pylon.

CORRESPONDENCE

The Editor does not hold himself responsible for opinions expressed by correspondents. The names and addresses of the writers, not necessarily for publication, must in all cases accompany letters intended for insertion in these columns.

MODEL FLYING

[2099] I have wondered many times recently why model building and flying has dropped out so much since the war, or, to be exact, about 1916, when most of us were on other work and in H.M. Forces. Prior to this year, model flying was really developing to a wonderful degree, particularly in the way of power models, C.A. and steam; then, just at the critical stage, everybody seems to fall to the background (not their own laxity I know), and here I would like to ask where are these gentlemen now? Are they still model building? Mr. Slatter, Mr. Houlberry, Mr. Louch, Mr. Bond, Mr. Dutton, and Mr. Pavely, Mr. Holman, Mr. V. E. Johnson, and many others that made history with models and articles in FLIGHT. In Liverpool here we were all dispersed in war-time, and now I am making a great effort (with Mr. Kilshaw's aid) to re-start a club in the spring of next year, by looking up the old members, and making an initial start, when we hope to increase the membership. Our aims will be the same as in pre-war days, except perhaps a little more ambitious—the scientific side of model flying and design, kite flying, and I hope I shall not appear over-enthusiastic, but in the not too distant future—gliding. The best flights witnessed here before were about 1 minute R.O.G. (twin propellers) and approximately 25 seconds tractor R.O.G. Mr. Kilshaw developed new tail designs and a huge tractor; Mr. Bennet developed the tail type with twin propellers; others, including myself, flew various types, including smaller tractors. The only types we did not touch were hydros. and power machines—the most interesting of all, I should think. However, if any of the gentlemen mentioned see this article, I hope they will give some information about themselves and their clubs, and publish any developments which may have taken place, for the good of all. Is it too much to expect of FLIGHT to take up a model section again, as I firmly believe it was the means of arousing enthusiasm in many fellows? Where are the London clubs' reports now? Finally, if there are any enthusiasts in the Liverpool area, I would be glad to receive a letter from them, and wishing FLIGHT continued success, and the desire for a model section as in the "good old days" (if not a bigger one). Hoping you can publish this letter.

F. A. LOWE

(Member of Liverpool Aero Research Club).

P.S.—Did Mr. Groves develop his steam-driven model any further? Has this machine ever accomplished the minute? It seemed to be the best-designed power model in existence at that date.

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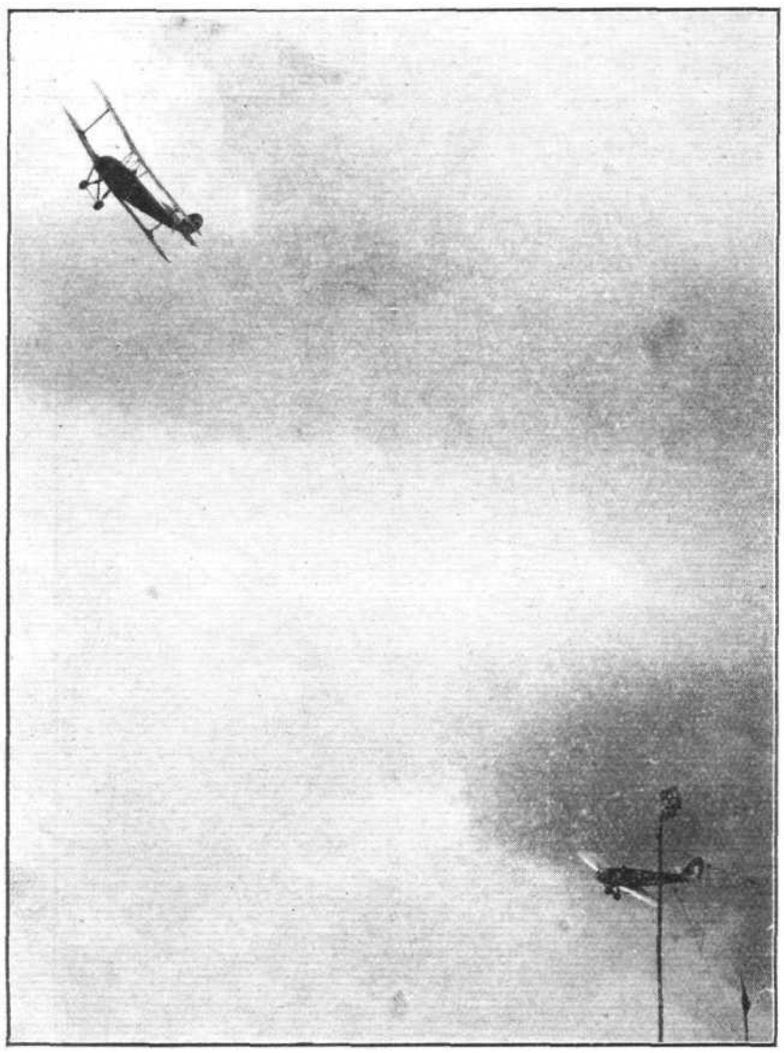
"Aircraft Transport Economy"

THE paper under above title, read by W. L. Cowley before the Royal Aeronautical Society on October 29, was probably the longest ever presented before that society, and in the end the lecturer arrived at the conclusion that the number of variables was so great and the data available so scarce that the results obtained must be received with a very open mind. It was considered, however, that the paper would prove useful in indicating which parts of the very complex subject showed promise, so that in these cases more elaborate calculations could be made. The lecturer considered that any increase in reliability during the winter months would, if it resulted in levelling out the seasonal variation in traffic, greatly increase the economic efficiency of air transport. On the question of economic size of machines the lecturer pointed out that all statistical evidence showed an increase in economy with increase in size, although from theoretical stress considerations the proportion of structure weight to total load should continually increase with size. The three-engined machine was considered to make for reliability of service, and if the economical efficiency did increase with size, the three-engined machine would be a natural development. Apart from this, however, the lecturer considered that the increased comfort and improved reliability would be sufficient justification for adopting this type of machine. The cruising speed of around 95 m.p.h. as used at present appeared to be fairly near the economical optimum.

In conclusion, the lecturer stated that apart from any abnormal development that might occur in aerial transport, one of the most promising fields for research would be upon the reduction of body drag, and the determination of the most suitable form to give the smallest drag for a given cabin space.



A LYMPNE REMINISCENCE: Bert Hinkler on the Avro "Avis" leading Boyes on one of the D.H.53's. The picture gives some impression of Hinkler's masterly handling of the "Avis."

Air Mails to Russia

THE Postmaster-General announces that the despatch of letters for Russia and beyond by the London-Berlin-Königsberg-Moscow Air Mail Service (*i.e.*, by the route numbered 4B on page 2 of the current Air Mail Leaflet) will be suspended for the winter after the despatch of October 30.

The London-Berlin Air Mail Service (Route 4A) will still offer, on days of regular flight, a saving of up to 24 hours in the transmission of letters for Russia and beyond posted by night mail from the provinces, or in London too late for the ordinary night mail.

R.A.F. "Skill at Arms"

ON November 2 the Secretary of State for Air presented to Flight-Lieut. Frederick G. Sherriff, M.C., Royal Air Force, of the R.A.F. School of Physical Training, Uxbridge, the "Skill at Arms" certificate which was awarded to him for his success at the Royal Tournament held in June last.

FLIGHT

THE ROYAL AIR FORCE

London Gazette, October 27, 1925

General Duties Branch

Pilot Officer W. H. O. Rumfitt is granted a permanent commission as a Flying Officer, with effect from September 14, 1925, and with seniority of September 14, 1924. The following are granted short service commissions as Flying Officers, with effect from and with seniority, of October 26 :—H. F. Jenkins, G. C. Stemp (Lt., R.A.R.O., The Buffs). The following Pilot Officers are promoted to rank of Flying Officer : D. C. Burnley (April 15) (substituted for *Gazette* August 4) ; E. H. Fielden (August 14) ; E. C. Boucher (September 14) ; J. S. Branch (Oct. 9) (since deceased) ; A. W. G. Martin (October 15).

Flight Lieut. G. D. Daly, D.F.C., is seconded for three years duty under the Colonial Office (October 14) ; Flight Lieut. J. A. Barron is placed on half-pay, scale B (September 16) (since retired) ; Flight Lieut. D. W. Grinnell-Milne, M.C., D.F.C., is placed on the retired list at his own request (October 14). The following Flying Officers are transferred to the Reserve :—Class A., F. V. Gauntlett (October 29). Class C., F. L. Hudson (Lieut., R.A., R.A.R.O.) (August 29).

Pilot Officer on probation F. W. Giveen resigns his short service commission (October 21) ; Flying Officer (Hon. Flight Lieut.) R. S. T. Fleming (Capt., I.A., retired), relinquishes his short service commission on account of ill-health (October 28) ; Flying Officer B. C. W. Windle, D.F.C., relinquishes his short service commission on account of ill-health (October 27).

Stores Branch

Flying Officer M. W. Keey is placed on half pay, scale B (October 28).

Accountant Branch

Pilot Officer on probation A. McBroom resigns his permanent commission (October 18)

Reserve of Air Force Officers

W. B. O'Reilly Coleman is granted a commission in Class A.A., General Duties Branch, as a Pilot Officer on probation (October 13) ; Flying Officer A. MacKenzie is confirmed in rank (October 21) ; Flying Officer G. A. Atkinson relinquishes his commission on account of ill-health, and is permitted to retain his rank (October 28) ; Flying Officer H. A. Seaby resigns his commission (October 27).

ROYAL AIR FORCE INTELLIGENCE

Appointments.—The following appointments in the Royal Air Force are notified :—

General Duties Branch

Squadron-Leaders : E. H. Sparling, A.F.C., to No. 24 Sqdn., Kenley 26.10.25. H. E. F. Wyncoll, O.B.E., M.C., to Air Ministry ; 26.10.25 B. E. Baker, D.S.O., M.C., A.F.C., to R.A.F. Depot on transfer to Home Estab. ; 16.10.25 ; H. J. F. Hunter, M.C., to R.A.F. Training Base, Leuchars, 8.11.25. R. F. S. Leslie, D.S.C., D.F.C., A.F.C., to R.A.F. Base, Gosport ; 28.10.25. H. K. Thorold, D.S.C., D.F.C., A.F.C., to No. 10 Group H.Q., Lee-on-Solent ; 1.11.25.

Flight-Lieutenants : W. E. Reason, to R.A.F. Depot ; 31.10.25. D. W. King, to H.Q. Spec. Res. and Auxiliary Air Force ; 12.11.25. G. C. O'Donnell, D.F.C., to No. 3 Group H.Q., Spittlegate ; 26.10.25. A. S. G. Lee, M.C., to Air Ministry ; 4.10.25. S. Graham, M.C., to No. 2 Wing H.Q., India ; 7.10.25. J. W. Turton Jones, to No. 31 Sqdn., India ; 26.9.25.

Flying Officers : R. H. Bibby, to No. 2 Flying Training Sch., Digby ; 26.10.25. D. E. Godwin, to remain at No. 17 Sqdn., Hawkinge, instead of to No. 2 Flying Training Sch., as previously notified. R. J. Montgomery-Moore, to Station H.Q., Andover, on transfer to Home Estab. ; 2.11.25. C. Dollery, to No. 20 Sqdn., India ; 6.10.25. H. F. Jenkins and G. C. Stemp, to No. 24 Sqdn., Kenley, on appointment to short service commns. ; 26.10.25. J. C. Hill, to Elec. and Wireless Sch., Flowerdown instead of to Central Flying Sch., as previously notified ; 26.10.25.

Pilot Officers : A. W. A. Ricks, to No. 7 Sqdn., Bircham Newton, on appointment to a Permanent Commn., from R.A.F. Cadet College ; 18.10.25. S. F. Bell, to No. 208 Sqdn., Egypt ; 5.10.25. W. A. Cooke, to No. 47 Sqdn., Egypt ; 10.10.25.

Stores Branch

Flight-Lieutenant : T. A. G. Hawley, to No. 1 Sch. of Tech. Training (Apprentices), Halton ; 16.10.25.

Flying Officers : C. B. Horsfield, to No. 12 Sqdn., Andover ; 16.10.25. H. O. Fellowes, to No. 24 Sqdn., Kenley ; 16.10.25 ; W. Bourne, to No. 41, Sqdn., Northolt ; 16.10.25.

Pilot Officer : A. J. Walker, to No. 1 Sch. of Tech. Training (Apprentices) Halton ; 21.10.25.

Accountant Branch

Flying Officers : A. H. Scaife, to Armament and Gunnery Sch., Eastchurch ; 4.11.25. E. C. Green, to No. 207 Sqdn., Eastchurch ; 4.11.25.

Medical Branch

Flying Officer : L. C. Palmer-Jones, M.B. to No. 24 Sqdn., Kenley ; 20.10.25.

Sir Roger Keyes has Forced Landing

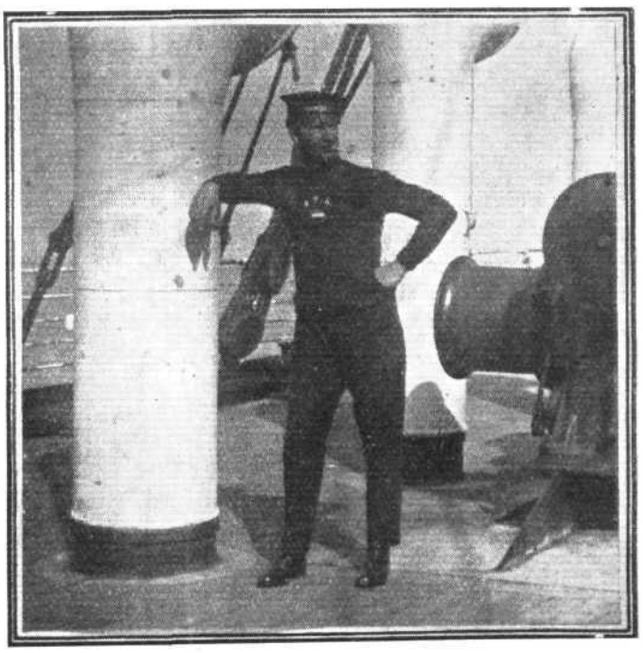
WHILE inspecting the Fleet air arm from aircraft-carrier "Eagle" off Malta on October 28 Vice-Admiral Sir Roger Keyes, Commander-in-Chief of the Mediterranean Fleet, met with an accident, owing to the machine in which he was flying being obliged to make a forced landing because of engine trouble. Sir Roger received slight injuries, and the pilot only sustained superficial cuts and bruises.

Cairo-Kano Flight

THE three R.A.F. pilots, Sq.-Ldr. Coningham and Flt.-Lieuts. Baggs and Rowley, who left Cairo on October 27 in three D.H.9A ("Liberty") biplanes for Kano, Nigeria, reached their destination on November 1. From Wady Halfa they proceeded to Khartoum on October 28, thence, next day, to El Fasher via El Obeid. They next flew across French territory to Abeshr and Fort Lamy (Lake Chad). They have now to make the return flight.

Col. Mitchell's Trial by Court-Martial

By the order of President Coolidge, Col. William Mitchell, is being tried by Court-Martial on a charge of violating one of the service regulations. Among the matters being considered by the Court are the statements published by Col. Mitchell in connection with the "Shenandoah" disaster.



IN LIGHTER VEIN: Mr. H. P. Folland as a "seaman." Mr. Folland was awarded first prize in a fancy dress dance on board the "Minnewaska" in which the British Schneider Cup Team participated.

THE BRITISH SCHNEIDER CUP TEAM AT PULITZER RACE : Mr. Fairey "lunches" the team on sandwiches, etc. (the etceteras are out of sight). In the group are seen Messrs. Folland, Mitchell, Fairey, Biard and Hinkler

AIR POST STAMPS

By DOUGLAS B. ARMSTRONG.

Air Post Flight in Uruguay

WE are informed by Mr. Francis J. Field that an extraordinary air mail flight from Montevideo to Florida (Uruguay) and return, took place on August 25 last, being the centenary of the Uruguayan Parliament. About 5,000 letters, etc., were carried, all told, those emanating from Florida being the scarcer. A special air-post cachet was struck in red, and, in addition, covers were franked with some commemorative postage stamps showing a view of the Parliament Building, besides official air-post stamps in the type of 1923, and a special registration label for air letters with a face value of 14 centavos.

Austrian Aero Club Flight

A DEMONSTRATION air-post flight was made at Aspern, on September 5 and 6, by the aviator Udet, under the ægis of the Austrian Aero Club meeting, when souvenir postcards numbered from 1 to 1,000 were sold for 1 schilling each, and impressed with a private cachet inscribed "Mitgeflogen Aspern b. Wien, 5/6 X.1925 Oesterr Aero Club." On the other hand, a special cancellation was used on both days by the official post office on the flying ground, lettered "FLUG MEETING OSTERR AERO. CLUB/5-6 Sept. 1925."

Italo-Swiss Air Post

A RETURN flight over the Milan-Zurich air post route was made on September 9, 1925, letters receiving a special cancellation inscribed round the circumference "Milano Ferrovia —Postal Aerea." The date is that of 7.9.25, the flight being delayed on account of unfavourable weather conditions.

Italian Air Stamps Impending

ABOUT eighteen months ago we described in detail a number of very effective designs that had been submitted in an artistic contest for vignettes suitable for reproduction upon Italian air post stamps. It is now reported that such an issue is in course of preparation.

Japanese Air Postmark

ACCORDING to the Japanese philatelic journal *Yuraku* the Department of Communications is considering the introduction of distinctive postmarks for air-borne correspondence, which at present receives no special postal marking, and is consequently liable to confusion with ordinary mail matter.

New Siamese Air Stamps

THE series of Siamese air mail stamps inaugurated in April last showing a figure of the mythical Garuda Bird, was extended on August 1 by two additional denominations, viz., 10 satangs brown and black, and 50 satangs orange and black.

A Bangkok correspondent advises us that as these stamps are also valid for ordinary postage large numbers that are offered for sale have never been flown. Covers that have actually travelled by air invariably bear the distinctive postmark containing a slightly lop-sided outline of an aeroplane.

First Flights

AN instructive table of first flights by air posts when adhesive aero stamps were employed is published by *Le Timbre-Poste* of Paris, from which we extract the following:

Italy, May 22, 1917.	Cilicia, June, 1920.
Austria, March 30, 1918.	Czecho-Slovakia, Aug. 15, 1920.
U.S.A., May 18, 1915.	Sweden, Sept. 19, 1920.
Hungary, July 4, 1918.	Danzig, Sept. 29, 1920.
Tunis, April 20, 1919.	Syria, Dec. 1, 1920.
Switzerland, April 30, 1919.	Uruguay, March 22, 1921.
Newfoundland, May 18, 1919.	Holland, May 1, 1921.
Colombia, June 18 1919.	Lithuania, June 25, 1921.
Japan, October 3, 1919.	China, July 1, 1921.
Germany, Nov. 10, 1919.	Memel, July 2, 1921.
Esthonia, Feb. 28, 1920.	Latvia, July 31, 1921.
Belgian Congo, April 1, 1920.	Morocco, Jan. 2, 1922.
Spain, April 4, 1920.	Mexico, April 15, 1922.

To this must be added—

Russia, Nov. 8, 1922.	South Africa, March 2, 1925.
Ecuador, July 17, 1923.	Albania, May 31, 1925.
Siam, Jan. 1, 1925.	Denmark, June 19, 1925.

The table is instructive, if only for the light that it throws upon the rise and development of the air post service throughout the world.

ROYAL AERONAUTICAL SOCIETY

(Official Notices)

Lecture.—The next lecture of the sixty-first session of the Royal Aeronautical Society will be held in the Library at 7, Albemarle Street, W. 1, on November 12, at 5.30 p.m., when a paper, by Mr. H. B. Howard, A.F.R.Ae.S., will be read on "Some Problems in Aeroplane Structural Design."

Informal Discussion.—An informal discussion on the subject of the Autogyro will take place in the Library on Monday, November 16, 6 p.m., when those interested are invited to attend and take part.

Election of Members.—The following members have recently been elected:—

Associate Fellows: Mr. H. J. Andrews, Major C. K. Cochran-Patrick, D.S.O., M.C., Mr. H. B. Gledhill, Mr. A. Gouge, Mr. Cedric Howarth, Capt. A. B. Miller, D.S.O., Mr. T. C. Sharwood, Mr. R. H. Walmsley, and Mr. M. W. Wood.

Student: Mr. C. W. Miller.

Members: Mr. H. G. ffiske and Mr. G. G. Parnall.

Temporary Honorary Member: General A. Guidoni, R.I.A.

Foreign Member: Mr. V. T. Friedrich.

J. L. PRITCHARD, Honorary Secretary.

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SAFETEX GLASS, LTD., Cranmer Road, Brixton, S.W. 9.—Capital £10,500, in 10,000 ordinary shares of £1 and 10,000 founders' shares of 1s. Acquiring the business of manufacturers of and dealers in non-splinterable glass carried on by "Contacto, Ltd.," of Cranmer Road, Brixton, together with the trade-mark "Safetex" and patents Nos. 237179 and 237379, entitled "Improvements in reinforced glass," together with patent rights for the U.S.A. and Canada, and to adopt an agreement with the said old company and H. W. Edmonds, the liquidator thereof. Directors: Sir Harry S. Foster, M.P., B. E. Foster, W. T. Brewer, A. J. Gupwell, W. E. Thorne.

AERONAUTICAL PATENT SPECIFICATIONS

Abbreviations: Cyl. = cylinder; i.c. = internal combustion; m. = motor
The numbers in brackets are those under which the Specifications will be printed and abridged, etc.

APPLIED FOR IN 1924

Published November 5, 1925

11,028. D. J. MOONEY, F. B. UNDERWOOD and E. E. BROWN. Metal aeroplane wings. (240,885.)
16,744. A. LAMBLIN. Radiators. (219,963.)
16,792. PETTERS, LTD., and R. A. BRUCE. Resilient telescopic struts for aircraft. (240,931.)
17,709. E. O. TIPS. Controlling devices for aircraft. (240,949.)
18,772. R. A. TOMBS. I.c. rotary engines. (240,970.)
23,609. M. A. MAZADE. Mercury stabilizers for aircraft. (223,228.)
25,441. H. J. POLLARD and BRISTOL AEROPLANE CO., LTD. Light metal structural members. (241,019.)
25,442. H. J. POLLARD and BRISTOL AEROPLANE CO., LTD. Light metal structural members. (241,020.)
29,452. J. T. REMEY. Method and apparatus for forming letters or symbols in the air. (225,884.)

APPLIED FOR IN 1925

Published November 5, 1925

76. SOC. RATEAU. Centrifugal pumps. (241,056.)
865. P. B. AND S. CROSSLEY. Aerodynamic or hydrodynamic machines. (241,060.)
8,184. Sir B. LESLIE. Aeronautical propulsion. (241,102.)

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